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SEPTEMBER 22, 1952

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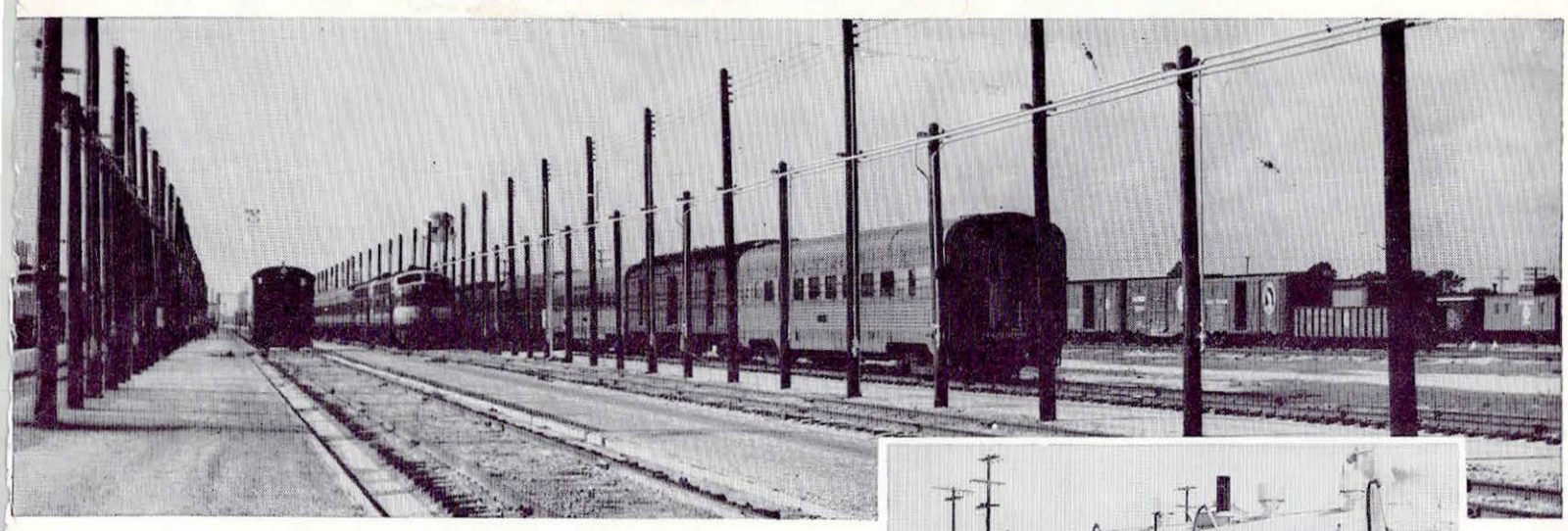

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keeps vital services* "ON THE JOB"

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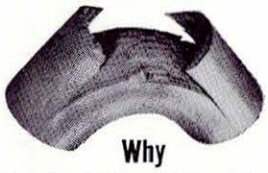

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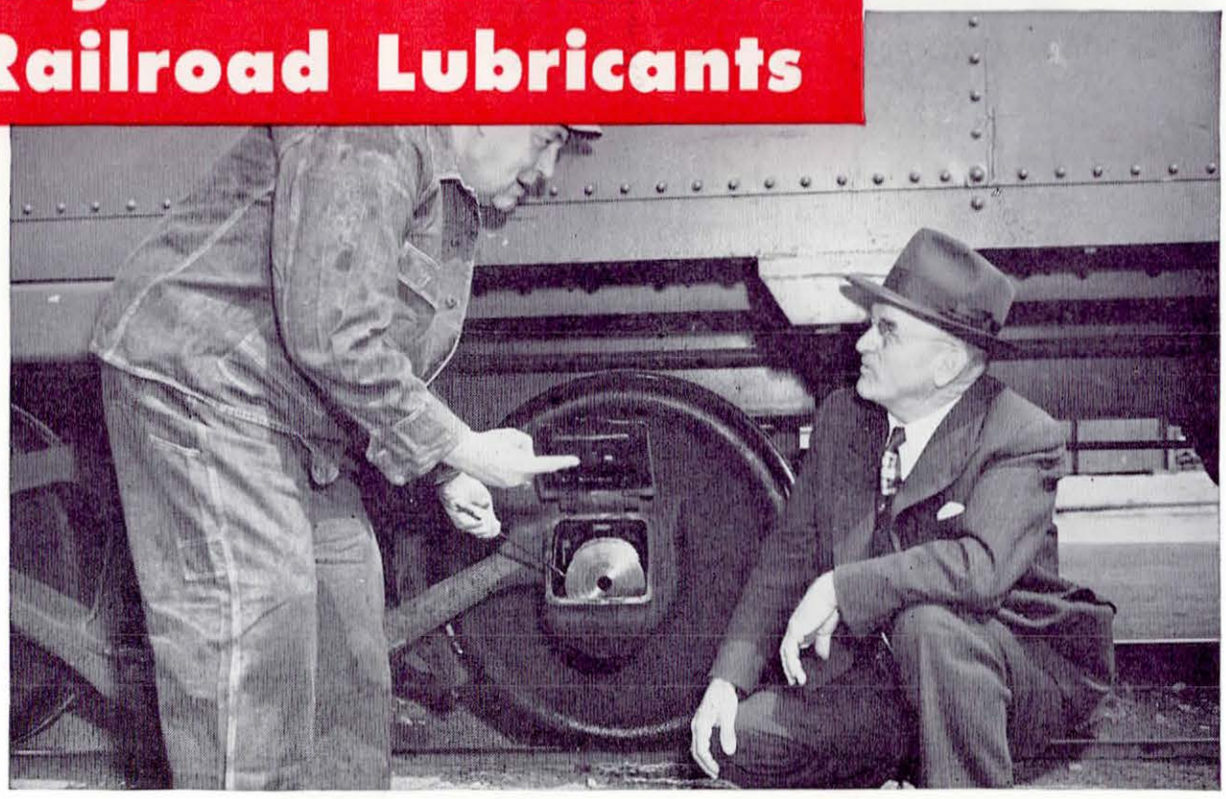

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AMERICAN LOCOMOTIVE CRANES

Vol. 133, No. 12 September 22, 1952

RAILWAY AGE

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Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price to railroad employees only in U. S., U. S. possessions, Canada and Mexico, $4 one year, $6 two years, payable in advance and postage free. Subscription price to railroad employees elsewhere in the Western Hemisphere, $10 a year; in other countries, $15 a year—two-year subscriptions double the one-year rate. Single copies 50¢, except special issues $1. Address Robert G. Lewis, Assistant to President, 30 Church Street, New York 7.

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Published by SIMMONS-BOARDMAN PUBLISHING CORPORATION, New York 7

Railway Age Railway Mechanical & Electrical Engineer Railway Engineering & Maintenance
Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia American Builder
Marine Engineering & Shipping Review Marine Catalog & Directory
Books covering transportation and building

Railway Age is a member of Associated Business Publications (A. B. P.) and Audit Bureau of Circulation (A. B. C.) and is indexed by the Industrial Arts Index and by the Engineering Index Service. Printed in U. S. A.

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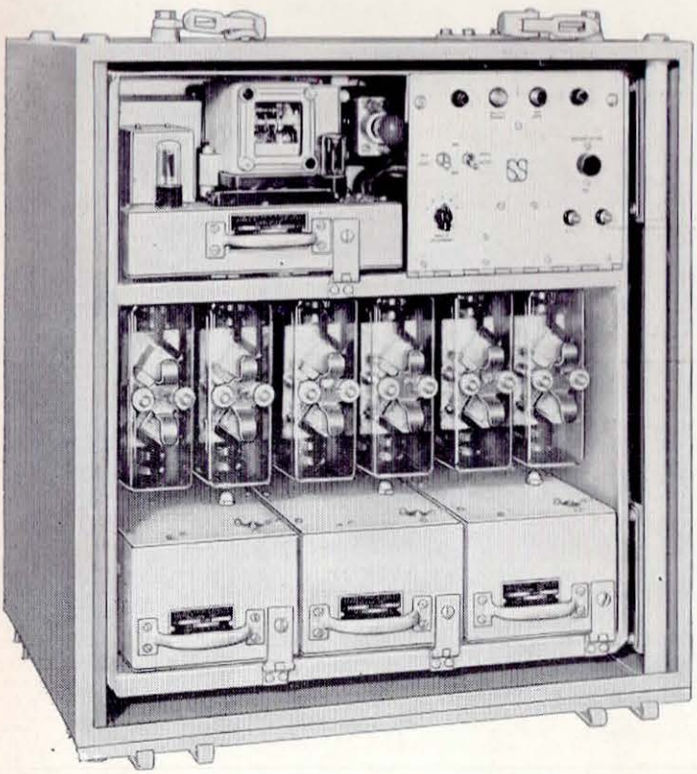

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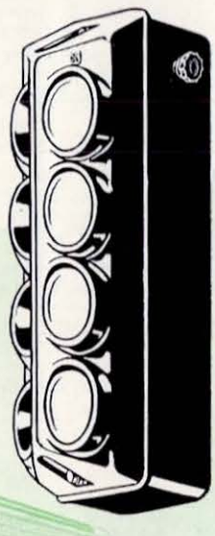

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WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, seven months
1952 ..... $5,911,265,980
1951 5,854,235,231

Operating expenses, seven months
1952 ..... $4,634,987,983
1951 4,646,642,007

Taxes, seven months
1952 ..... $ 672,002,739
1951 645,095,748

Net railway operating income, seven months
1952 ..... $ 503,043,404
1951 443,128,736

Net income, estimated, seven months
1952 ..... $ 326,000,000
1951 278,000,000

Average price railroad stocks
September 16, 1952 ..... 61.68
September 18, 1951 ..... 55.20

Car loadings, revenue freight
36 weeks, 1952 25,400,431
36 weeks, 1951 27,764,622

Average daily freight car surplus
September 13, 1952 5,817
September 15, 1951 3,553

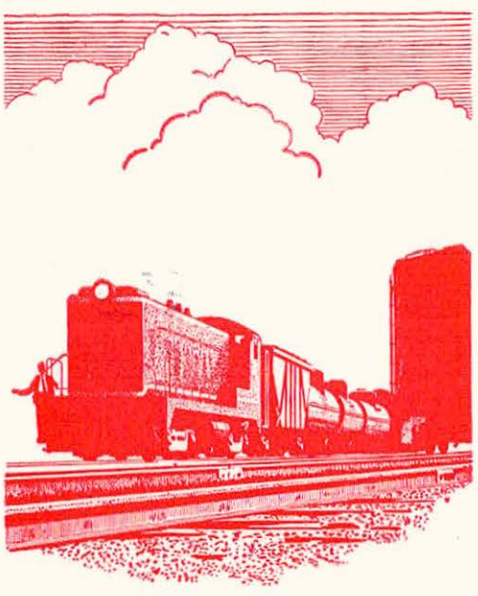
Average daily freight car shortage
September 13, 1952 9,270
September 15, 1951 12,619

Freight cars delivered
August 1952 4,537
August 1951 7,183

Freight cars on order
September 1, 1952 95,761
September 1, 1951 139,104

Freight cars held for repairs
August 1, 1952 111,680
August 1, 1951 101,001

Average number railroad employees
Mid-August 1952 1,219,257
Mid-August 1951 1,297,060



In This Issue . . .

"A SYSTEM WHEREBY FREIGHT CARS equipped with appropriate identification devices, will proceed to their destinations without the time-consuming classification procedures we now go through," was suggested as a not too fanciful future possibility by Col. S. H. Bingham, chairman of the New York City Board of Transportation, in an address to the annual convention of the Military Railway Service Veterans. While conceding that this is a development for "the more distant future," Col. Bingham can "readily foreseen the time when an electronic device on a train, acting upon a corresponding component on the right-of-way, will automatically select the route, set the switches and signals, and make a record of the passage of the train."

LATEST CONVENTIONS to be held by various railroad organizations are reported in this issue—the Treasury Division of the A.A.R. on page 62; and the American Railway Bridge and Building and Roadmasters' and Maintenance of Way Associations on page 65. On page 60 is an account of the first real business session of what bids fair to become an increasingly important, if somewhat highly specialized, group—the Railway Systems and Procedures Association. Primary emphasis at this group's busy two-day session in Chicago was on problems of work simplification and of yard and terminal operation.

WHAT ABOUT "TRAIN X"? Proponents of the revolutionary "Train X" claim that its substitution for a main-line train of 14 conventional cars would save about $1.90 per train-mile; for a train of half as many standard cars savings from use of "Train X" would be about half as large, or around 90 cents per train-mile. Their claims can hardly be proved—or disproved—until and unless a complete train is built and actually operated. But some interesting and hitherto unpublished facts about the new train, which may permit at least tentative conclusions as to its technical and economic practicability, are included in the question and answer article which leads off this issue, on page 49.

WHAT HAPPENS WHEN AN EARTHQUAKE HITS a major railroad line? That question is answered, at least in part, as is the corollary question of what the affected railroad can do about it, in the article which starts on page 54. There, in pictures and text, is a complete story of how the Southern Pacific's San Joaquin Valley route was hit by the July quakes at Tehachapi, and of what the railroad and associated contractors did, and did fast, to restore service over the line. It is probably superfluous to point out that the cost of such restoration came out of the railroad's own resources.

WEEK AT A GLANCE

In Washington . . .

STILL GOING UP, continues to tell the story on the diesel locomotive's share of total railroad work. In the first part of this year, diesels handled a new high of nearly two-thirds of all gross ton-miles in road freight service, seven-tenths of all passenger service car-miles, and more than three-quarters of all yard switching locomotive-hours. Figures are from the latest edition of the "Monthly Comment" of the I.C.C.'s Bureau of Transport Economics and Statistics. They are given in detail, with comparisons with prior years, and with corresponding data on fuel costs and locomotive age, in one of the leading news articles in this issue.

CAPITAL EXPENDITURES by Class I line-haul railroads for the first six months of 1952 topped those of the same period last year by 8.3 per cent, or $55 million, according to an I.C.C. bureau study. Detailed figures are included in the news columns.

. . . And Elsewhere

"NOTHING," says a letter recently received by *Railway Age*, "infuriates us railroaders so much as the 'New-Fair-Raw Deal' claim that the federal government will pay our pensions. Today I received my paycheck with the usual $18.75 deducted for 'railroad retirement.' Consider the big annuity I could purchase for $18.75 plus the $18.75 paid by the railroad to match my tax!" What aroused our correspondent's ire was an editorial in the Pittsburgh Sun-Telegraph listing recipients of railroad retirement and unemployment benefits among the 30,443,907 persons who, the editorial said, "receive money, directly or indirectly, from the federal treasury." We think he has a point—but he didn't go far enough. Not all recipients of federal largesse, of course, pay for it themselves as directly as do railroad employees. But the only money the federal government can pay out for any purpose must first be paid to it in taxes. Directly or indirectly, every one of us pays those taxes; nobody can avoid paying some of them, sometime, somehow. Nobody gets something entirely for nothing.

"VOICE OF THE BOOK," the new $50,000 film recently made by the safety Section of the Association of American Railroads, was given its first public showing in Denver on September 10 on the occasion of another "first"—the first inter-railroad "family safety rally" ever put on by the Safety Section. Held on the evening of the day scheduled for the section's regional meeting in Denver, the rally in Tramway Hall attracted some 800 employees of all railroads serving Denver, their children and neighbors.

IT LOOKS NOW as if the 15,000-mile American Buslines, Inc., will be absorbed into the growing Transcontinental Bus System—an "about face" from the contemplated assimilation of American into various Greyhound properties which fell through early this year. If the move gets I.C.C. approval, Transcontinental, now largely confined to the South and West, will emerge as a 47,000-mile coast-to-coast system ranking second only to Greyhound, which has 90,000 route-miles. The American-Transcontinental merger, announced jointly by the two companies, would enable Transcontinental to give Greyhound "some real competition," a spokesman said.

NEW CHAIRMAN of the Treasury Division of the Association of American Railroads is Arthur M. Waldron (above), treasurer of the New York, Chicago & St. Louis. Mr. Waldron's election to the chairmanship took place at the division's recent annual convention at Swampscott, Mass. A full report of that meeting begins on page 62.

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The ADLAKE #31 lantern is the result of almost a century of manufacturing for the railroads of America. This experience, plus the assured satisfaction that has always gone with the ADLAKE name, is your best guarantee of safety, economy and dependability.

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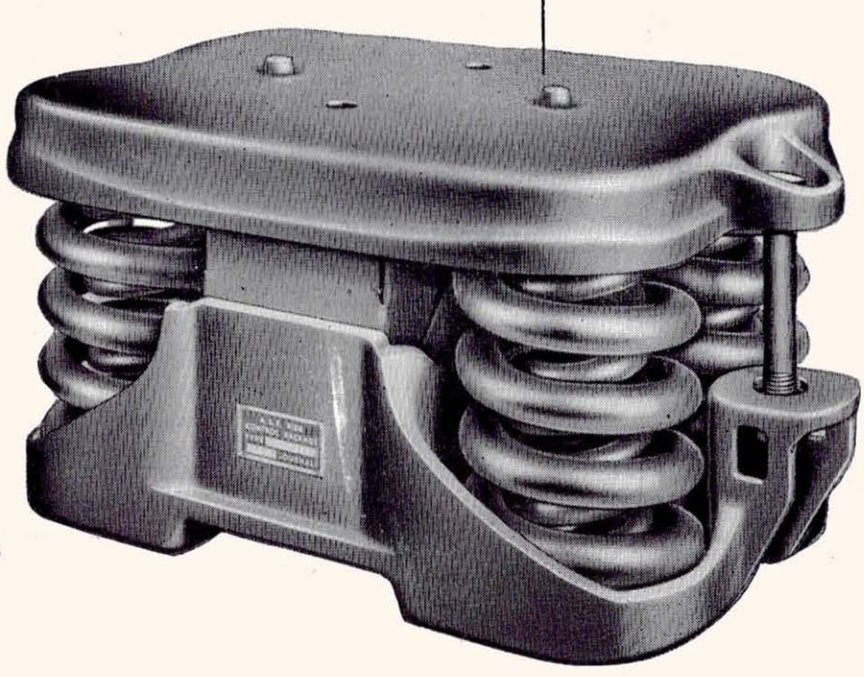
The Ride-Control Package is a complete spring group with built-in 3-way friction control (the famous A.S.F. Ride-Control principle). The unit comes completely assembled, is installed as a unit in place of the present spring group.

This Package gives 2½ to 3 inches of controlled spring travel, in place of the AAR-standard 1-9/16 to 1⅝ inches. Separate Ride-Control springs provide constant pressure on hardened friction surfaces to control movement in all three directions.

Cost is low—about $160 per car set—but it means big savings. Ride-Control helps protect lading and cut claims. It helps protect rolling stock and cut repair costs. It helps protect roadbed and cut track maintenance. You can't lose! And you can have it now!

Talk it over with your A.S.F. representative and ask him for all the details; or write American Steel Foundries, 400 North Michigan Ave., Chicago 11, Illinois.



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Diesel-Electrics Handling Nearly Two-Thirds of Road Freight Service

Diesel-electric locomotives handled 64.2 per cent of all gross ton-miles performed in road freight service during this year's first seven months. That was a rise of nearly 12 percentage points above the diesels' 52.66-per-cent share of the road freight service performed in last year's 12 months.

This and other like comparisons with respect to passenger and yard services of Class I railroads, were pointed up in figures presented by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission in the latest issue of its "Monthly Comment." The "Comment" also had articles on the age of locomotives and railroad fuel costs. The latter emphasized again the diesel-electric's advantage from that standpoint.

Steam Performance

The figures showing the diesel's performance in road freight service during this year's first seven months also showed that the proportion of such ton-miles handled by coal-burning steam locomotives was 26.74 per cent. That compared with the coal-burner's 1951 share of 35.85 per cent and its 1946 share of 69.55 per cent. Diesel-electrics in 1946 handled only 9.73 per cent of the gross ton-miles performed in road freight service.

As to oil-burning steam locomotives, their share of road freight service in this year's first seven months was 7.14 per cent. That compared with 9.65 per cent for the year 1951 and 18.6 per cent for 1946. Comparable figures for the electric locomotive were 1.85 per cent, 1.83 per cent, and 2.11 per cent, respectively.

Passenger and Yard Service

In passenger-train service, diesel-electrics handled 70.03 per cent of the car-miles performed in this year's first seven months. That compared with 62.73 per cent in the year 1951 and 15.28 per cent in 1946. Meanwhile, the coal-burning steam locomotive's share of passenger service fell from 52.05 per cent in 1946 to 19.11 per cent in 1951, and to 13.7 per cent in the first seven months of this year. The respective shares of the oil-burning steam locomotive were 26.19 per cent, 11.78 per cent, and 9.62 per cent; those of the electric were 6.48 per cent, 6.38 per cent, and 6.65 per cent.

In yard service, diesel-electrics performed 75.49 per cent of the switching locomotive hours in this year's first seven months. That compared with 67.79 per cent in the year 1951 and 29.46 per cent in 1946. The coal-burning steam locomotive's share was down to 19.2 per cent as compared with 25.8 per cent in 1951 and 59.6 per cent in 1946. Oil-burning steam locomotives, which were on duty for 9.57 per cent of the switcher hours during 1946, performed 5.17 per cent of such service in 1951, and 4.02 per cent in the first seven months of this year. The electric's shares of the yard service were 1.32 per cent, 1.19 per cent and 1.24 per cent, respectively.

Fuel Cost Ratios

The data on fuel costs were figures for the first six months of this year. They showed that the fuel cost of the road freight service then performed by diesel-electrics was 16.3 cents per thousand gross ton-miles. That compared with 31.5 cents for coal-burning steam locomotives, 39.8 cents for oil burners, and 29.1 cents for electrics.

As to passenger service in this year's first half, the diesels performed on a fuel-cost basis of three cents per car-mile. That compared with 5.6 cents for coal-burners, 4.7 cents for oil-burners, and 3.8 cents for electrics. On a locomotive-hour basis, figures for yard service were: Diesels, 69.7 cents; coal-burners, $2.443; oil-burners, $3.07; electrics, $1.175.

The bureau also had figures showing that, in this year's first half, diesel-electrics performed 62.8 per cent of the road freight service, but accounted for only 45.5 per cent of that service's fuel costs. Likewise they performed 69.5 per cent of the passenger service and 74.9 per cent of the yard service; but their proportions of those services' fuel costs were only 58.2 per cent and 45.6 per cent, respectively.

The article on age of locomotives showed that Class I line-haul railroads had 17,493 diesel-electric units in service as of December 31, 1951; and that 97.2 per cent of them were built in

the past 12 years (38 per cent during 1950 and 1951). Also as of the close of last year, there were 21,747 steam locomotives in service. Of these, 31.7 per cent were built prior to 1915, and 85.3 per cent were built before 1930. Only two per cent were built in the 1945-1951 period.

Electric locomotives in service at the end of last year totaled 780. Eighty-eight per cent of them were built prior to 1940.

First Half's Capital Expenditures Were 8.3 Per Cent Above Last Year

Gross capital expenditures made by Class I line-haul railroads in this year's first half were 8.3 per cent above those made in the first six months of last year—$715 million as compared with $660 million.

This was shown by reports to the Interstate Commerce Commission's Bureau of Transport Economics and Statistics, which were summarized in the latest issue of the bureau's "Monthly Comment."

The expenditures made during this year's first half included $539 million for equipment and $176 million for fixed facilities. These represented increases of 6.2 per cent and 15.5 per cent, respectively, above the outlays of $508 million and $152 million made in the first six months of last year.

The accompanying table, reproduced from the "Comment," is the bureau's summary of railroad reports on first-half expenditures and railroad estimates submitted with respect to the second half.

ACTUAL AND ESTIMATED GROSS CAPITAL EXPENDITURES—CLASS I RAILWAYS

Period	Number of roads	Road Thousands	Equipment Thousands	Total Thousands
Actual 1951:				
1st half	131	$152,442	$507,697	$660,139
2nd half	131	210,680	543,152	753,832
Year	131	363,122	1,050,849	1,413,971
Actual 1952:				
1st half	131	176,135	539,113	715,248
Estimated 1952:				
3rd quarter	127	$98,783	$216,980	$315,763
4th quarter	127	96,157	247,032	343,189
2nd half	127	194,940	464,012	658,952
Total: 1952 actual and estimated	..	371,075	1,003,125	1,374,200
Percent of change:				
1st half 1952 vs. 1st half 1951	..	+15.5	+ 6.2	+ 8.3
2nd half 1952 (est.) vs. 2nd half 1951	..	— 7.5	—14.6	—12.6
Year 1952 (actual and estimated) vs. 1951	..	+ 2.2	— 4.5	— 2.8

White Hits Federal Regulation Policies

Laws which were set up to regulate railroads now manage railroads, William White, president of the New York Central, said on September 16 in an address at a Commerce & Industry Association luncheon held in New York City's Commodore Hotel in connection with the unveiling of the 100,000th freight car built for eastern railroads since the end of World War II (see story on page 13). "In the face of this patent danger to our economic system—the danger that comes when government takes over the management functions of private business—American business and industry have remained relatively indifferent," Mr. White added.

The postwar modernization program of railroads has cost them six and one-half billion dollars, Mr. White said. To get this money, he went on, railroads "have dug into working capital until they have reduced it by 75 per cent. They have sold a vast amount of equipment trust obligations . . . But you know as well as I that the man who lives off his capital will reach the point where he has no credit rating to borrow on. And that . . . is a danger point many railroads are reaching."

The NYC officer listed five major recommendations railroads are proposing for streamlining the nation's transportation laws: That it shall be the policy of federal, state and municipal government for users of transportation to pay the full cost of that form of transportation, including their fair share of cost of facilities provided by use of public monies; that unreasonable delays in Interstate Commerce Commission action on requests for freight rate adjustments be eliminated; that the I.C.C. consider effects of proposed rates on maintenance of railroad credit rather than possible effects of the rates on railroad traffic volume; that the long-and-short-haul clause be repealed; and that railroads shall have the right of appeal to the commission from adverse decisions by state commissions with respect to abandonment of passenger train service when railroads can show a continuing financial loss from operation of those services.

Charles E. Wilson, former director of the Office of Defense Mobilization, in an address which followed Mr. White's, congratulated eastern railroads for starting positive action against oppressive government regulation and sounded a call for a second era of trust busting—this time against concentration of power in government.

Mr. Wilson proposed the sale of all existing public power and water projects and similar enterprises to the American people through exchange of stock in them for outstanding government bonds. "The purpose," he said, "is to let all Americans who can and will buy a share of stock in America—of their own will; to make them stockholders in the true sense of exercising both choice and control, instead of being forced as taxpayers to finance undertakings beyond their choice and control . . . Instead of tax-free power and water projects, the new companies would pay taxes approximating a billion yearly. And if they are economically justifiable undertakings in the first place, this will prove that they are, or the potential investors will simply not invest their savings."

Two New Mediators Appointed by N.M.B.

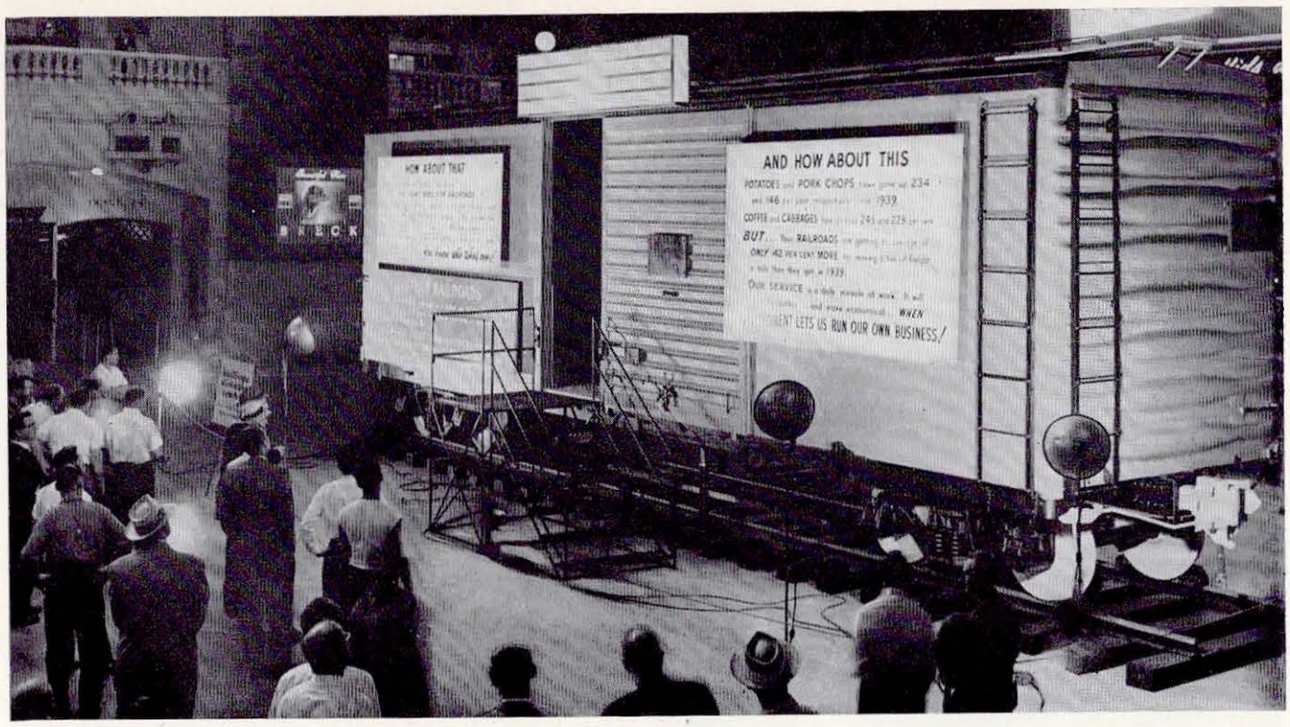
A. Alfred Della Corte and Michael J. O'Connell, both of New York City, have been appointed to the staff of mediators of the National Mediation Board. Mr. Della Corte was employed by the Long Island for several years and has had experience handling labor matters on that road. Mr. O'Connell was assistant general superintendent for the Hudson & Manhattan for many years and also has had experience in labor matters.

Commerce's Transport Office Has Research Job

The Office of the Under Secretary of Commerce for Transportation is "off on a program of research," which is a "long-time job."

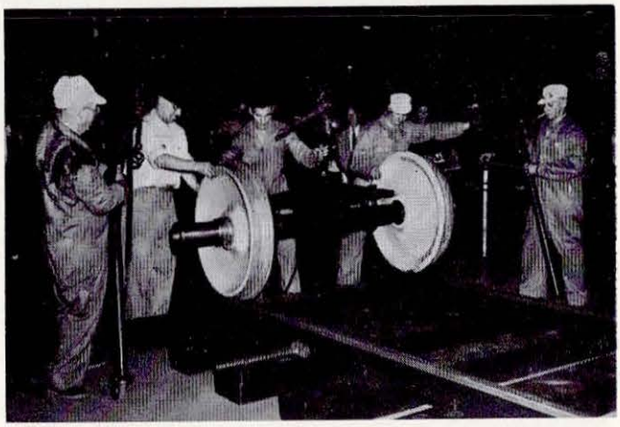
That's what the under secretary, Jack Garrett Scott, told the National Association of Motor Bus Operators in a September 17 address at the association's annual meeting at the Drake Hotel in Chicago. Mr. Scott emphasized that his office will do its work in cooperation with the transportation industry; and he reiterated, what Secretary of Commerce Sawyer has said before, that the Department of Commerce "does not seek or desire any regulatory function, that it seeks only to assemble information which will lead to recommendations for constructive legislative and administrative action."

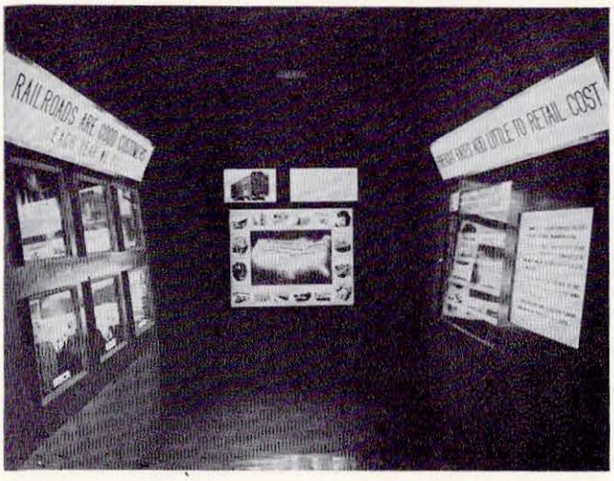
Mr. Scott, who was formerly general counsel of N.A.M.B.O., got his address

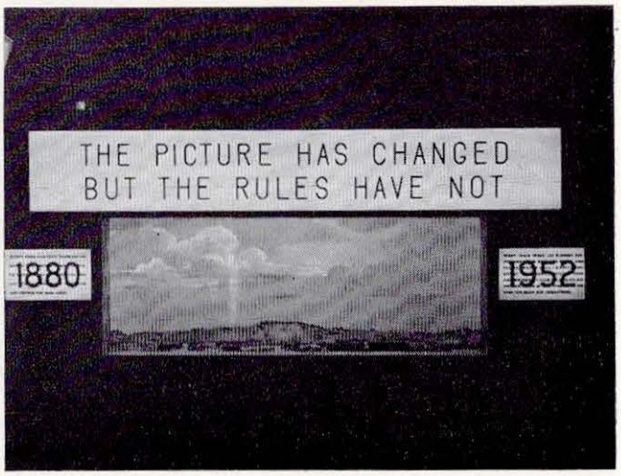


Special "Exhibit" Box Cars Tour Northeastern States

To symbolize the need for modernized government regulation of the railroads, two special box cars are touring northeastern states, visiting 10 large and 77 small communities, under auspices of the Eastern Railroad Presidents Conference (*Railway Age*, September 15, page 13). The upper picture shows one of the complete cars, as set up for its first exhibition in New York's Grand Central Terminal; at the right is one of the steps in assembling parts of the portable car, which, including track and ties, weighs a total of 19,000 lb.; and below are two of many special displays which are set up inside the car. Both cars were built at the Pennsylvania's Altoona shops, under the direction of C. K. Steins and G. H. Newcomer, mechanical engineer and assistant mechanical engineer, respectively, for the PRR. Materials, mostly aluminum and plywood, were largely donated by various railroad supply companies. (See also story on page 12.)







under way with a citation of President Truman's 1950 statement that he would "look to the secretary of commerce for leadership with respect to transportation problems and for the development of over-all transportation policy within the executive branch." In preparing for its research job on "major transportation problems," Mr. Scott said his office has lined up a number of part-time consultants who are representative of the several branches of the transport industry. He added that this system of consultation with members of the industry "has the important result of keeping our thinking on a practical and realistic level."

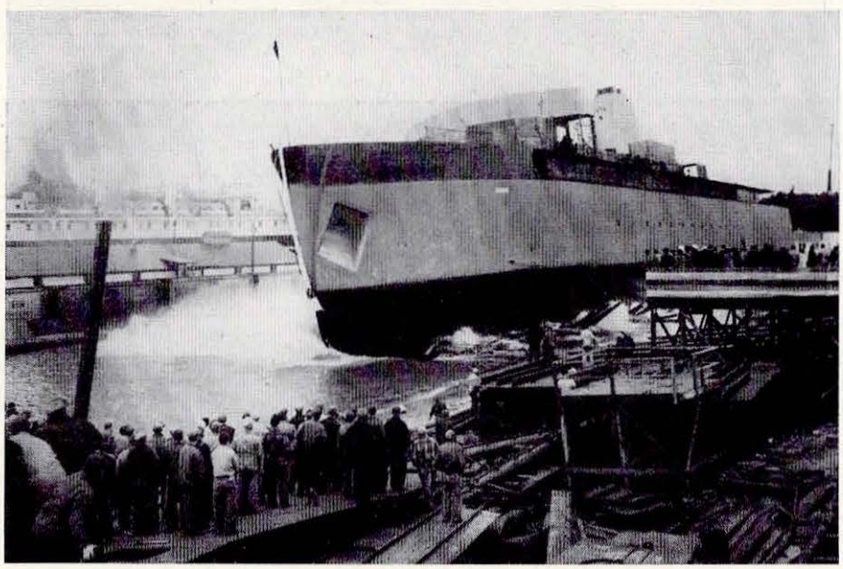
The under secretary went on to say his office has developed a "tentative program of research" for submission to the Department's Transportation Council at a meeting scheduled to be held this week. The council is an advistory group organized last spring.

Because it had not passed on the tentative research program, Mr. Scott said he was able to give details of that program. He did say, however, that the proposed studies "undoubtedly will revolve around three main topics," as follows: (1) Government promotional activities; (2) government regulatory activities, including their nature, scope, and evaluation; (3) coordination and consistency between promotional and regulatory activities. A "fourth main head," Mr. Scott also said, will consist of "special miscellaneous problems, such as the transportation excise tax, relation of wage and rate determinations, the question of railroad passenger deficits, etc."

Twin Christening for New C&O Carferries

Before an estimated 1,200 guests gathered at the Sturgeon Bay (Wis.) shipyard of the Christy Corporation, the Chesapeake & Ohio's new trans-Lake Michigan carferries were formally christened "Badger" and "Spartan" on September 6.

THE "SPARTAN" (above), launched last January 4, was christened on September 6 by Mrs. John A. Hannah, wife of the president of Michigan State College. Sponsor for the newly launched "Badger" was Mrs. Walter J. Kohler, Jr., wife of the governor of Wisconsin.



BROADSIDE LAUNCHING of the "Badger" (below) threw a heavy wash against old refrigerator cars spotted to protect a metal shop on the adjacent pier. Visible behind the building is a part of the "Spartan"—$5 million sister ship nearly ready for service.

The "Badger" was launched broadside during the twin ceremonies. The "Spartan" — launched last January 4 without being named — was nearing completion and being readied for a shakedown cruise prior to joining the C&O fleet about October 1. Visitors were invited to inspect the nearly completed vessel after the ceremonies were concluded.

Both of the 410-ft. ships are designed to accommodate 32 freight cars or 150 automobiles. Passenger quarters—completely air conditioned—include 44 outside and 16 inside state rooms, a dining room seating 52, a lounge and promenade. The double-bottom hulls are divided by steel bulkheads into 11 water-tight compartments. Construction is fireproof throughout. Twin propellers will drive the vessels at a normal service speed of 18 m.p.h., and enable them to complete an additional trip daily as compared to carferries currently in service.

"Most Profitable"

Transportation of passengers and their automobiles, over the "toll road that calls for no driving," was characterized by M. M. Cronk, vice-president and general manager of the C&O's Pere Marquette district, as "the most profitable form of railroad transportation business in the country." He said the C&O plans, for the first time, actively to promote this service "in a big way."

While most of the passenger revenues are accrued in summer months, the carferry fleet operates the year 'round as a connecting rail link between Wisconsin and Michigan. Home port of the C&O fleet is Ludington, Mich.; three routes connect that port with Milwaukee, Manitowoc and Kewaunee—all on the Wisconsin side.

Operation of all trans-Lake Michigan car ferries (including those of the Ann Arbor and the Grand Trunk-Pennsylvania routes) has been halted since July 4 by a strike of the Great Lakes Licensed Officers Association over wages and working rules (*Railway Age*, September 15, page 14).

As to the Transportation Council, the under secretary said he and Secretary Sawyer have "very high hopes" that it will "not only fulfill the great expectations of providing the best possible meeting place for the transportation industry and government, with mutual respect for and confidence in each other, but also that it will soon attain a prestige and a record of accomplishment similar to that which is now held . . . by the Business Advisory Council."

The Transportation Council's plan of procedure stipulates that there will be "no votes," and that discussions "are completely off the record," Mr. Scott explained.

In calling the research program a "long-time job," he went on to express his hope "that it will be sufficiently grounded and under way by the time I leave office so that my successor will recognize its soundness and value and will continue what we have striven so dilligently to get started." The under secretary then said that his office's staff is "a small one for so formidable an undertaking." He added, however, that he has no plans to augment the staff, but will utilize transport material developed by other government agencies which have thus far been "most cooperative." Also he proposes to "lean heavily upon the transportation industry itself and upon the several transportation associations for help in this respect."

Canadian Roads Amend Rate Increase Plea

An immediate general freight rate increase of 8 per cent, instead of 7 per cent, will be sought by Canadian railroads in hearings scheduled to begin before the Board of Transport Commissioners on September 22. The 8 per cent increase will be requested in the form of an amendment, filed with the board on September 13, to the railroads' July 14 petition for a 7 per cent increase (*Railway Age*, July 21, page 12). The additional 1 per cent would, it is estimated, produce added revenue of approximately $5 million per year, and is said to be necessary to compensate for higher costs since the original application was filed.

The September 22 hearing will cover the first part of a railroad application for a total freight rate increase originally set at 16 per cent, but now raised to 17 per cent. Hearings on the remaining 9 per cent involved in the overall increase will begin later this year.

I.C.C. Bureau Corrects Data On Revamp Security Values

The Bureau of Transport Economics and Statistics of the Interstate Commerce Commission has issued a corrected version of its recent statement which showed that market values of new-company securities, received by holders of the "most junior" old-company bonds of reorganized railroads, were substantially less than the par or stated values of such securities.

As reported in *Railway Age*, August 25, page 11, the foregoing was generally true, but the Norfolk Southern case was an exception. The corrected version leaves that showing unchanged, but it modifies other showings of the original version which were noted in the August 25 issue's report.

Thus listings in the compilation, other than those for the NS, now show that the June 30, 1952, market values of the new-company securities ranged from 14.4 per cent of their stated or par value in the case of the Soo Line to 97.4 per cent in the case of the Seaboard Air Line. The SAL percentage was 96.7 in the original version, which had the Minneapolis & St. Louis at the lower extremity of the range with a percentage of 14.1. The corrected percentage for the M&StL is 63.

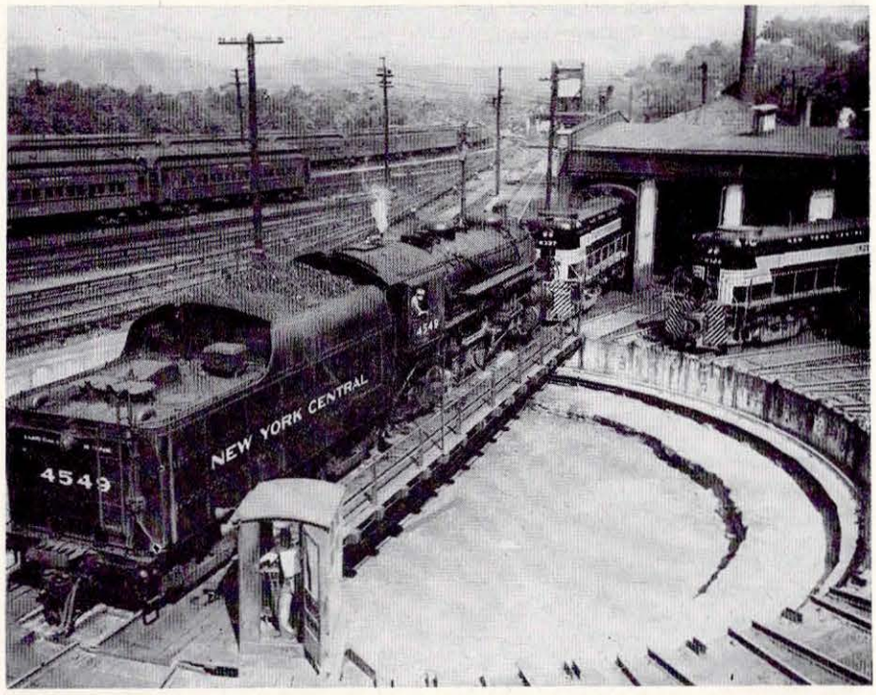
The corrected version's range of new-security market values to related amounts of claims filed by old-company bondholders is from 2.5 per cent in the case of the M&StL to 71.3 per cent in the case of the Chicago & Eastern Illinois. The original version had put this M&StL percentage at 0.6.

"Guided Freight Cars" Visualized by Bingham

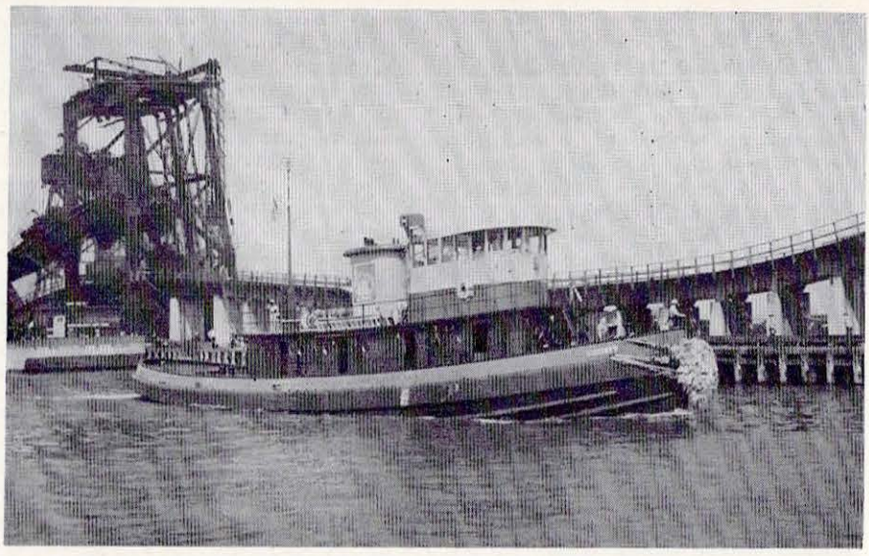
If railroads are not freed from archaic restrictions and regulations that no longer apply under today's conditions, and if railroad operations are not modernized, this country will have a nationalized transportation system, S. H. Bingham, chairman of New York City's Board of Transportation and consultant to the Long Island Transit Authority, said in an address to the seventh annual convention of the Military Railway Service Veterans in New York on September 20.

Railroads must be much more active in taking advantage of modern technological developments to increase productivity of manpower, Col. Bingham emphasized. He cited dieselization as an important step in the right direction and suggested that development of the gas turbine be followed closely. "Our next step forward, for which the devices are already available, is in the field of train control," he continued. "We must make greater use of electronic developments and equipment to bring about greater centralization of train control and consolidation of interlocking and switching functions.

"There is no longer any need for a signal tower at each interlocking plant. With devices now available, train operations over many miles of track and over hundreds of switches and interlockings can be watched and controlled from one location with complete assurance of safe and rapid operation. I think we can go even further than this. In the Board of Transportation we are now working on a device which will identify trains electrically.



STEAM-HAULED COMMUTER TRAINS are a thing of the past for the New York Central's operations in York City metropolitan area. No. 4549 (above), built in 1912 by the American Locomotive Company, made the final steam-powered run from North White Plains to Dover on September 11. Twenty-three new diesels have taken over runs from 50 steam locomotives on the road's Hudson and Harlem divisions. The West Shore division was dieselized in August, the Putnam division in September, 1951.



THE "LIBERTY," the Jersey Central Lines' new 1,600-hp. diesel tugboat, stands off Pier 18, Jersey City, with the railroad's big coal dumpers in the background. First of four new diesel tugboats built for the railroad, the "Liberty" joined the JCL's marine fleet on September 11.

I can readily foresee the time when an electronic device on a train, acting upon a corresponding component on the right-of-way, will automatically select the route, set the switches and signals and make a record of the passage of the train, without any towerman being there at all.

"By a logical extension of this system and perhaps a short flight of fancy into the more distant future," Col. Bingham said, "it is possible to conceive of a system whereby freight cars equipped with appropriate identification devices will proceed to their destinations without the elaborate and time-consuming classification procedures which we now go through. This may seem fanciful today, but it is in this direction we must go if we are to enable railroads to compete with other carriers for the high valued and high rated freight."

Knudson Says Time to End D.T.A. "Not Yet at Hand"

The time to end the Defense Transport Administration "is not yet at hand," its administrator, James K. Knudson, said last week. At the same time, he revealed that he was instituting "a D.T.A. demobilization study which will be ready for use whenever the national welfare indicates that our activities can be further reduced or wholly discontinued."

Mr. Knudson made these statements in a September 17 address at the annual meeting of the National Association of Motor Bus Operators at the Drake Hotel in Chicago. Most of the address was devoted to a discussion of bus industry problems and the industry's role in the defense program.

The D.T.A. administrator, however, did have further comment on the matter of ending controls. Until the time to end them comes, he said, "we shall pursue our current policy of reviewing all controls in all our divisions with a view to discarding any that are not needed. . . D.T.A. has always, and will always, stand for government activity in the transport field limited to a bare *minimum* of controls."

Mr. Knudson also referred to "government-industry teamwork" involved in the government's practice of "borrowing executives from business." He suggested that the plan might be extended to the point where "interchange of personnel between government and business might be effected with benefit to both."

"An arrangement," Mr. Knudson added, "might possibly be made for assigning industry consultants for limited hours of duty in certain major bureaus of the Interstate Commerce Commission. The detail of commission personnel for similar tours of duty with shippers or carriers would afford them first-hand knowledge of industry problems and the realitties of business and commerce."

R.R. Public Relations Officers Organize

A professional society of those engaged in or concerned with railroad public relations was organized in New York on September 17, with the formation of the Railroad Public Relations Association.

J. B. Shores, director of employee and public relations of the Texas & Pacific, was elected president. George C. Frank, assistant to president of the Erie, was chosen as regional vice-president for the East; Gilbert H. Kneiss, assistant to president—public relations of the Western Pacific, was named regional vice-president for the West, and B. E. Young, assistant to the president of the Southern, was chosen as regional vice-president for the South. J. Don Parel, manager of agricultural relations of the Association of American Railroads, was selected as secretary-treasurer.

The primary purpose of the new association is to promote the development and effectiveness of public relations within the railroad industry by the exchange of ideas, opinions and experiences regarding public relations as it pertains to the individual railroads in particular and the railroad industry in general.

Membership in the organization will consist of railroad officers in charge of the public relations departments and the members of their staffs; other railroad officers whose responsibilities embrace public relations; public relations officers of state, regional and national associations engaged in promoting the interests of the railroad industry.

Freight Car Loadings

Loadings of revenue freight in the week ended September 13 totaled 881,218 cars, the Association of American Railroads announced on September 18. This was an increase of 135,174 cars, or 18.1 per cent compared with the previous week, which included the Labor Day holiday; an increase of 30,406 cars or 3.6 per cent, compared with the corresponding week last year; and an increase of 14,560, or 1.7 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended September 6 totaled 746,044 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, September 6

	1952	1951	1950
Eastern	122,437	118,773	127,154
Allegheny	151,290	150,037	156,570
Pocahontas	54,438	55,564	56,564
Southern	111,164	110,138	107,983
Northwestern	134,313	131,436	130,872
Central Western	115,377	109,995	116,294
Southwestern	57,025	56,826	56,012
Total Western Districts	306,715	298,257	303,178
Total All Roads	746,044	732,769	751,449
Commodities:			
Grain and grain products	39,836	43,510	43,313
Livestock	10,413	11,375	9,437
Coal	136,774	131,681	141,256
Coke	13,548	15,582	14,506
Forest products	40,091	41,818	40,609
Ore	93,591	82,534	80,993
Merchandise l.c.l.	63,142	63,061	77,361
Miscellaneous	348,649	343,208	343,974
September 6	746,044	732,769	751,449
August 30	727,344	829,481	851,841
August 23	834,120	838,587	838,665
August 16	805,704	829,398	851,240
August 9	782,171	809,365	847,708
Cumulative total 36 weeks	25,400,431	27,764,622	25,881,486

In Canada.—Carloadings for the 10-day period ended August 31 totaled 109,979 cars, according to the Dominion Bureau of Statistics.

	Revenue Loaded Cars	Total Cars Connections Rec'd from
Totals for Canada: August 31, 1952	109,979	50,471
Cumulative Totals August 31, 1952	2,729,763	1,173,234

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended September 13 were announced by the Association of American Railroads on September 18 as follows:

	Surplus	*Shortage*
Plain Box	359	2,646
Auto Box	38	40
Total Box	397	2,686
Gondola	6	2,655
Hopper	5	3,536
Covered Hopper ..	0	182
Stock	117	22
Flat	3	180
Refrigerator	4,696	0
Other	593	9
Total	5,817	9,270

More Time for Presentations On Truck Commodity Data

Division 1 of the Interstate Commerce Commission has extended until October 31 the period during which it will receive presentations with respect to its proposal to require common and contract truckers to file reports giving freight commodity statistics. The previous deadline was September 30 (*Railway Age*, August 18, page 14).

ORGANIZATIONS

The **Transportation Club of Louisville** will hold a forum meeting on September 24 to discuss "Traffic Bureaus—Service Rendered to the Shipper, the Receiver and the Community." R. A. Whitty, director of traffic, Belknap Hardware & Manufacturing Co., will conduct the meeting, which will be preceded by a dinner at the Kentucky Hotel. J. P. Haynes, manager, transportation department, Louisville Chamber of Commerce, will be the principal speaker.

The **Southwest Shippers Advisory Board** has docketed for discussion a proposed request for additional through merchandise service from the north and northeast to basic points in Louisiana and Texas. The proposal will be formulated in a meeting of the board's general L.C.L. Committee being held in connection with the board's 91st regular meeting on September 23-25 at San Antonio, Tex. Other proposed L.C.L. Committee matters include discussion of a possible department or section of the Association of American Railroads "with direction and supervision over l.c.l. matters," and adoption of a simplified method of billing interline l.c.l. Railroad members of the committee have been invited to attend a shippers meeting to be presided over by R. A. Berry, traffic manager for Morgan & Lindsay, Inc., of Jasper, Tex. Paul T. Jackson, traffic manager, Enid Board of Trade, Enid, Okla., will preside over general sessions of the board on September 25. The **Traffic Club of San Antonio,** besides sponsoring a joint luncheon session at which Dr. J. R. Stockton, director of the bureau of business research, University of Texas, will discuss the general business outlook, has arranged entertainment in the form of an evening boat ride down the San Antonio river to LaVillita.

The **Chicago Transportation Club** has planned its annual rail educational tour to include visits to leading manufacturing plants in Waukegan, Ill., and Kenosha, Wis.; a special train will leave the Chicago & North Western's Chicago station at 8:45 a.m., C.D.T., September 24. The northbound trip will be made via Mayfair, Ill., and Lake Bluff—a route normally used only for freight service.

Railroad Enthusiasts, Inc., New York Division, will hold its next meeting on September 24, at 8 p.m. in Grand Central Terminal, Room 5928. Leo L. Schmuecker, operating manager of the Sperry Rail Service, will be guest speaker.

SUPPLY TRADE

Sheller L. Steinwender has been appointed to the new position of vice-president—sales of the **Schaife Company.** His responsibilities will include supervision of all sales activity of pressure vessels for gases, air and liquids—range boilers, liquefied petroleum gas cylinders, diesel starter tanks, armament and others. Mr. Steinwender formerly was general sales manager of the Eastern district for the A. O. Smith Corporation.

E. O. Lunde, who has been appointed works manager of the **Magor Car Corporation,** as reported in *Railway Age* August 25, page 16, began his business career in 1923, as a draftsman with the former Standard Steel Car

E. O. Lunde

Company. From 1928 to 1931 he worked for the Koppel Industrial Car & Equipment Co., and, in the latter year, joined Magor Car as a draftsman. He was appointed chief engineer in 1942, the position he held at the time of his recent appointment.

Frederick E. Siepert has retired as traffic manager of the **Pittsburgh Consolidation Coal Company** because of poor health. He has been with the company since 1930.

James A. Saunders, formerly assistant general traffic manager of the **Abitibi Power & Paper Co.,** Toronto, has been appointed general traffic man-

A. O. Myers (left) and B. K. Wingerter (right), who have been appointed, respectively, regional manager and district sales manager of the Southeastern region of the Electro-Motive Division of General Motors Corporation at Jacksonville, Fla., as reported in last week's *Railway Age*. Mr. Myers formerly was district sales manager at Washington, D.C.; Mr. Wingerter has been sales representative in the Southeastern region.

R. R. Seward, Jr., who has been appointed to the newly created position of merchandising manager of the Electro-Motive Division of General Motors Corporation at LaGrange, Ill. Mr. Seward joined E.-M.D. in 1949 as assistant parts merchandising manager.

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ager, to succeed **John O. McKerrow,** who has retired after 34 years of service. **W. H. Shoemaker** has been appointed assistant general traffic manager and **J. L. Dusto,** traffic manager —rates.

R. H. Hill, whose appointment as assistant general manager of transportation sales for the **Sherwin-Williams Company** was announced in last week's *Railway Age*, joined the company in 1917. Mr. Hill will maintain headquarters in Cleveland and, during

R. H. Hill

the absence of **C. B. Bull,** manager, who is convalescing from a protracted illness, will supervise the company's transportation sales activities. He also will continue as manager of the Atlantic Coast transportation zone.

S. P. Nunley has been appointed general traffic manager and assistant to vice-president of supply and transportation of the **Phillips Petroleum Company,** Bartlesville, Okla. In his new capacity, Mr. Nunley will have charge of all rail, water, highway and commercial aviation transportation and automotive maintenance. **T. P. Washington,** traffic manager, will supervise rail and for-hire highway transportation.

Theodore B. Manheim, formerly with **Scholler Brothers, Inc.,** Philadelphia, has joined the sales staff of the **Dearborn Chemical Company,** Chicago. Mr. Manheim will cover the Philadelphia and Delaware territory, with headquarters in Philadelphia.

Eric O. Prange has been appointed district manager of the Detroit branch office of the **Claud S. Gordon Company,** with headquarters at 2832 East Grand boulevard.

Fred S. Durham, Jr., vice-president and secretary of the **Bonney Forge & Tool Works,** Allentown, Pa., who for the past several years has supervised the company's sales efforts, has assumed additional responsibilities as director of sales. **Harry J. Seaman** has been appointed field supervisor and **E. S. Sensenderfer,** manager of merchandising.

John H. Strome, formerly assistant to president of the **Inland Steel Container Company,** a subsidiary of the Inland Steel Company, has been appointed sales manager. **Thomas T. Crowley** has been appointed assistant to president to succeed Mr. Strome.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Atchison, Topeka & Santa Fe** has received approval from its board of directors to build 500 hopper cars, 500 gondola cars and 250 covered hopper cars in the road's own shops.

The **Chicago, Burlington & Quincy** has ordered one 125-ton flat car from its Havelock, Neb., shops.

The **North American Car Corporation** has ordered 75 70-ton covered hopper cars from the Pullman-Standard Car Manufacturing Company.

The **St. Louis Southwestern** has ordered one 125-ton flat car from its Pine Bluff, Ark., shops.

The **Southern Pacific** has ordered 1,000 70-ton flat cars, 450 hopper-bottom and 350 tight-bottom 50-ton gondola cars, 100 70-ton gondola cars for transporting sulphur, and 100 50-ton pulpwood flat cars from its own shops. The latter 200 cars are for service on the subsidiary Texas & New Orleans. An SP announcement of authorization to build 2,004 freight cars was reported in *Railway Age*, September 1, page 24.

The **Texas Mexican** has ordered 30 70-ton 52½-ft. gondola cars and five 70-ton hopper ballast cars from the Pullman-Standard Car Manufacturing Company for delivery in the second quarter of 1953. Cost of the gondola cars is $199,500 and of the ballast cars $39,335.

LOCOMOTIVES

1,703 New Locomotives Installed in 8 Months

Class I railroads in the first eight months of 1952 put in service a larger number of locomotives than were installed in the same period of 1951, but the number of power units was less, the Association of American Railroads announced last week.

New locomotives installed in the first eight months totaled 1,703 and comprised 2,188 power units. Of the total number of locomotives, 1,691 were diesel-electrics, 11 steam and one electric.

Class I roads put in service 1,647 new locomotives in the same period of 1951. These consisted of 1,633 diesel-electrics, comprising 2,267 power units. In addition, 12 steam and two electric locomotives were installed.

New locomotives installed in August this year totaled 210—all diesels except two which were steam. In August last year 164 locomotives were put in service, all being diesel except for two steam. The 208 diesels installed in August this year consisted of 269 power units, while the 162 installed in August a year ago consisted of 238 units.

Class I roads had 999 new locomotives on order on September 1. These included 976 diesel with 1,169 power units. The remaining 23 were steam. Class I roads on September 1 last year had 1,557 new locomotives on order. These included 1,545 diesels comprising 2,073 power units, 10 steam and two electrics.

SIGNALING

The **Norfolk & Western** has ordered from the Union Switch & Signal Division of the Westinghouse Air Brake Company material for installation of traffic control on approximately 70 miles of single track between Bentonville, Va., and Vardo, Md. In addition to the style C control machine, which will be installed at Roanoke, Va., division office, the order includes code and carrier equipment, styles M-23A dual-control electric switch machines, SL-21A electric switch locks, relays, rectifiers, transformers, housings, etc. Field installation will be handled by railroad forces.

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UNEQUALLED FOR EFFICIENT CONTROL, SIMPLICITY, ECONOMY

The Vapor UNIZONE System for open-bodied cars requires only two simple, accessible parts for selective control of temperature:

1. A Vapor Rador Cycling Thermostat—plugs-in like a light cord;
2. A Vapor UNIZONE Regulator—removable merely by loosening four unions.

Both can be replaced in less than ten minutes and then serviced and held in reserve, permitting low-cost, time-saving car-maintenance scheduling like that of air brake triple valves.

Every open-bodied car going into railroad shops can be, *and should be*, converted to modern Vapor UNIZONE. One basic layout. No valves or mechanical parts inside car. Investigate the many benefits of this system that eliminates shopping.

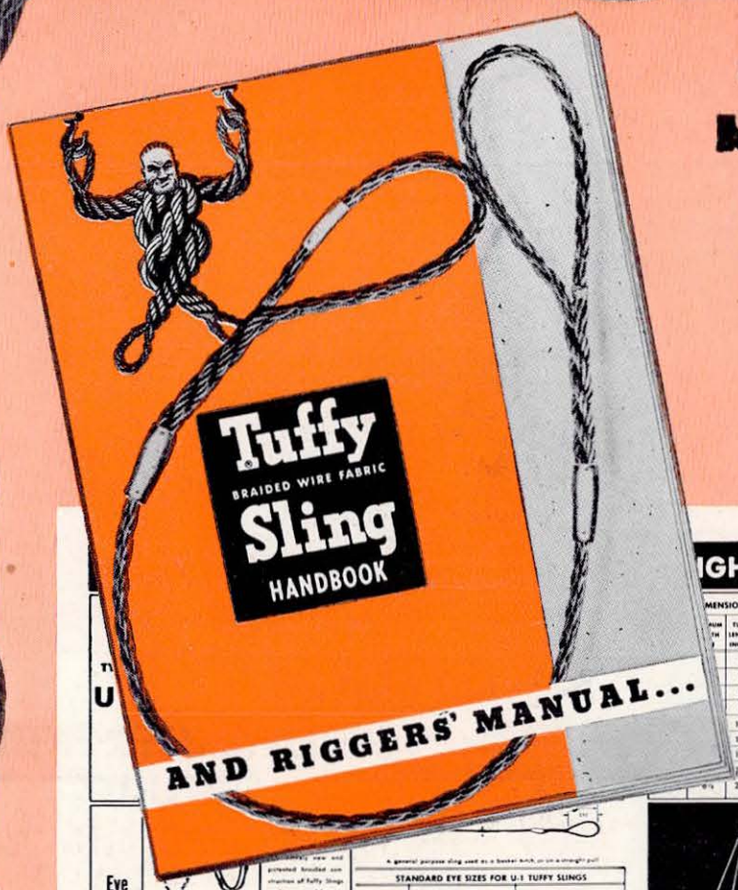
ASK FOR BULLETIN NO. 567
IT TELLS THE WHOLE UNIZONE STORY

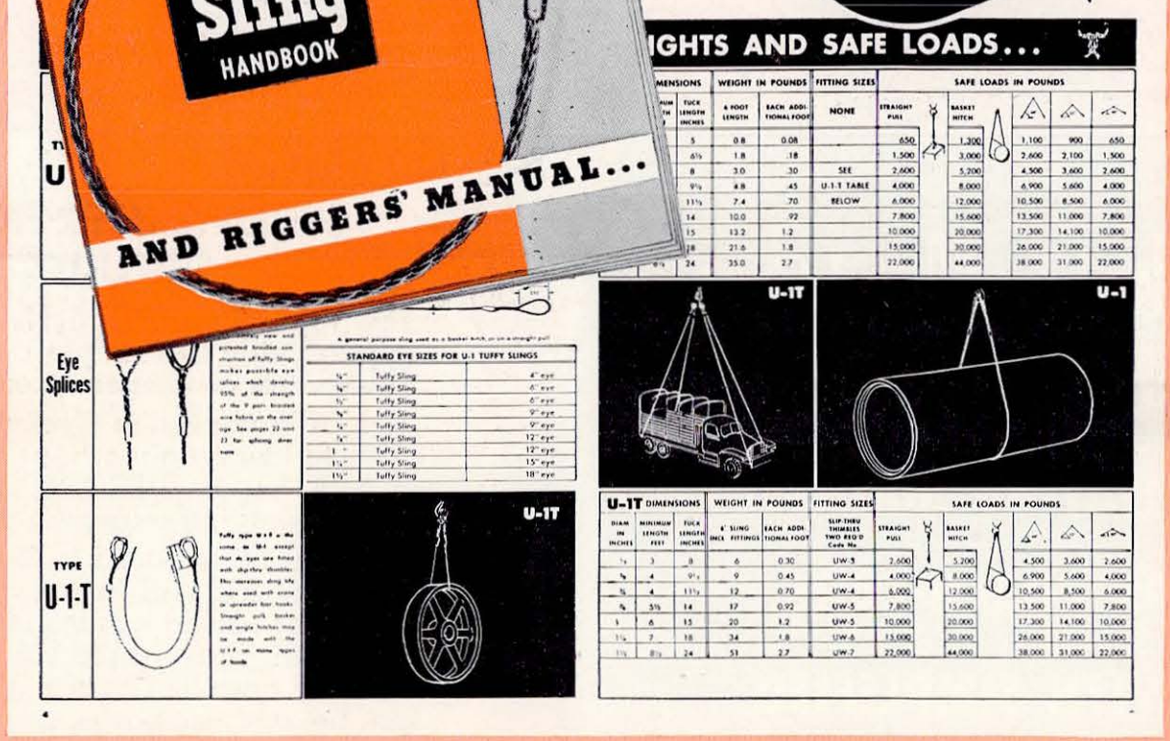
VAPOR HEATING CORPORATION 80 EAST JACKSON BLVD., CHICAGO 4, ILLINOIS

NEW YORK • ST. PAUL • DENVER • ST. LOUIS • PORTLAND • WASHINGTON • PHILADELPHIA
SAN FRANCISCO • JACKSONVILLE • RICHMOND • HOUSTON • LOS ANGELES • MONTREAL

Just Off to Help

Free!





UNION WIRE ROPE CORP

union Wire Rope

the Press and Ready You Cut Sling Costs!

Only Handbook of its Kind in the Sling Field. You just can't measure Tuffy Slings by the old sling standards. Because of the new characteristics and efficiencies developed in Tuffy's 9 part, machine braided wire fabric construction, all users of slings need this Sling Handbook to know the facts about lower sling costs through longer sling service. You can have it FREE for the asking. It gives you—

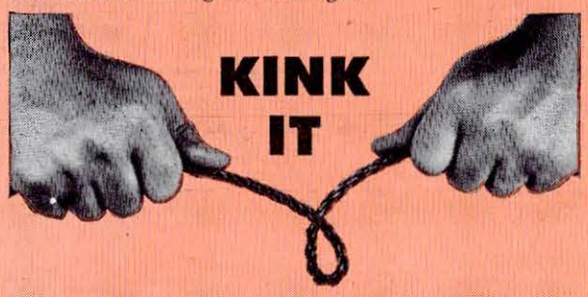
Factual Data On 12 Sling Types and On Various Types of Sling Fittings. That's right, all the working data—dimensions, weights, safe loads, standard eye sizes, tuck lengths, sizes and data on standard and special fittings, straight pull, basket, choker and angle hitches, simplified ordering procedure, etc., on 12 factory fitted and factory packaged sling types. Also there is valuable information on sling care and on braided wire fabric for rigging your own slings.

30 Illustrations of Sling Uses—help you determine the types to fit your sling jobs. Should none of the 12 factory fitted types exactly fit, then the handbook tells how our engineers develop special types for special uses.

Step by Step, Illustrated Instructions On Splicing Both Tuffy Slings and Wire Rope. Splicing the braided wire fabric of Tuffy Slings is made easy with visual instructions. And, to make the sling handbook doubly useful, it contains 24 pages of visual instructions on making 7 kinds of wire rope splices, attaching sockets, ferrules and thimble clamp. Efficiencies of wire rope attachments, as established by actual strength tests, are tabulated.

You'll find this Sling Handbook and Riggers Manual easy to use and highly useful. A copy is yours with our compliments. Simply fill out and send the coupon.

Tie a knot in a Tuffy Sling. Note its flexibility. Pull the knot tight—then untie it. See how readily the patented braided fabric straightens out again.



It's hard to do by hand without the aid of a vise. If you are able to kink a Tuffy, then see how easily the patented braided wire fabric straightens out without material damage.

Get FREE Sling Sample—See For Yourself All The Advantages of Tuffy Slings

To see how entirely different they are you just have to handle and try out a Tuffy Sling. That's why we have made up a supply of 3 ft. samples. Get yours and prove for yourself Tuffy Sling superiority. Fill out the coupon—It's FREE.

UNION WIRE ROPE CORPORATION

2256 Manchester Avenue Kansas City 3, Missouri

Please send FREE of Cost—

☐ Tuffy Sling Handbook

☐ 3 ft. Sample of Tuffy Sling

*Name*_____

*Title*_____ *Company*_____

*Address*_____

*City*_____ *State*_____

"That was an **expensive saving,** wasn't it?"

"What do you mean?"

"When that car was re-decked five years ago, we omitted pressure-treatment from the specifications because we didn't think we could afford the forty dollars that pressure-treatment would have cost."

"Well, we had to keep maintenance costs down."

"That's just the point . . . we don't keep maintenance costs down when we go in for expensive economies. But, can we afford *not* to invest forty dollars more in pressure-treatment with a life expectancy of three or four times what we're getting now with untreated lumber? Now we have to pay for another re-decking job that pressure-treatment would have eliminated by giving us ten more years of service. That would have paid for the forty dollars a number of times over."

"That looks like sound logic to me. We'll have to stop thinking of pressure-treatment as a cost . . . it's really an investment *that pays dividends."*

• • •

Discussions like these have led the way to tremendous savings in operations. Can we help you examine all possibilities for economies through pressure-treatment, by making an analysis and report on your rolling stock and shop practice? Write, wire or phone R. H. Bescher, Manager, Technical Department, Orrville, Ohio.

KOPPERS **PRESSURE-TREATED WOOD**

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

Fast, on-time performance of New York Central freight and passenger service has long been a matter of record.

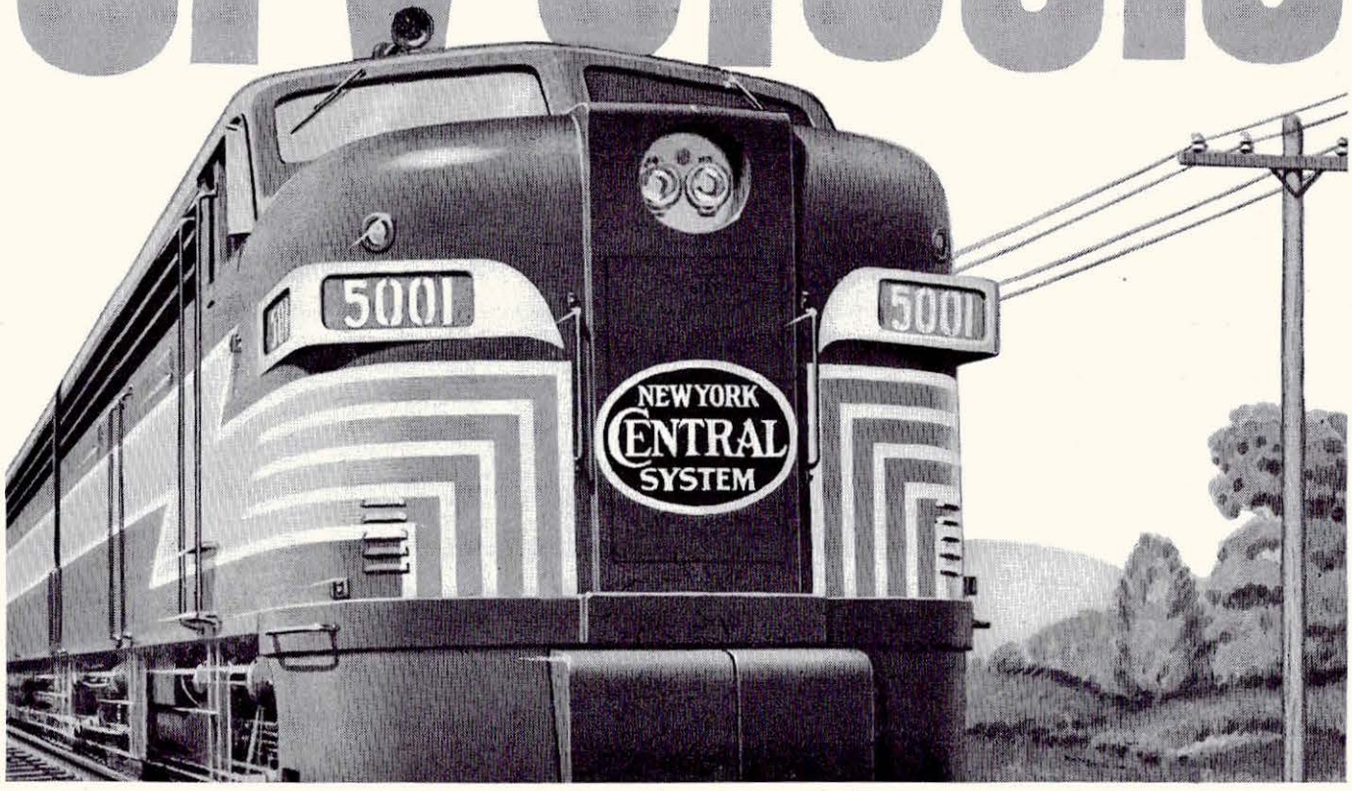
Helping the Central maintain this performance are dependable Diesel-electrics which use chromium-vanadium and other types of vanadium steels for many of their vital parts.

For example, many of the Central's Diesels have drawing motor pinions and gears made of chromium-vanadium steel (AISI 6145) to give maximum wear resistance, high strength and toughness. Other parts such as crankshafts, valve springs and couplers use vanadium steels to obtain the right combination of ductility, toughness, and fatigue resistance.

To find out how vanadium steels can be engineered to fit *your* railroad equipment needs, call our nearest technical representative today. He will be glad to put his experience to work for you.

Crack trains on the New York Central System get <u>longer service life</u> thanks to

Cr-V steels



MAKERS OF ALLOYS
VANCORAM
CHEMICALS AND METALS

VANADIUM CORPORATION OF AMERICA
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.
DETROIT • CHICAGO • CLEVELAND • PITTSBURGH

How to make packings last longer

Tips by Johns-Manville Engineers to help you keep production rolling

Keep equipment in repair for best packing service

"Bucking" shafts throw me!

Packings are for sealing only. Trying to compensate for shaft misalignment or vibration by overpacking and excessive gland pressure results in scored shafts and ruined packing. Think of a stuffing box as a potential brake assembly that may develop considerable frictional resistance with attendant heat and wear.

Worn shafts wear me down

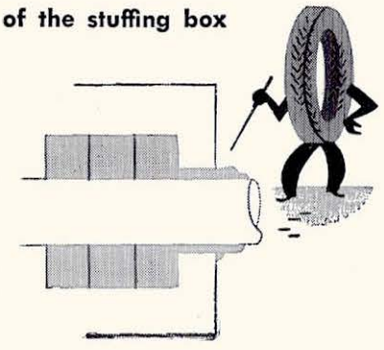
Trying to make packing compensate for excessive shaft or rod wear will shorten packing life materially without alleviating the undesirable condition. Pack correctly to avoid excessive shaft and rod wear. Replace worn shafts and rods as soon as possible to avoid adding the expense of damaged packings to the cost of parts replacement.

Keep my lantern clear

If the stuffing box is equipped with an oil, grease or water lantern, its purpose is defeated when the lantern ring is omitted or the opening blocked by improperly installed packing or other obstruction. This can deprive the packing of lubrication or cooling and result in premature failure.

Don't let me get out of the stuffing box

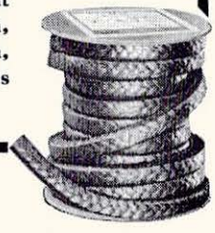
If the shaft or rod is badly worn, the packing may be extruded into the system when the gland follower is taken up. Considerable difficulty such as packing getting into valves or traps or contaminating the fluid handled may result. Rebush the stuffing box or use a junk ring to reduce the clearance.



Why you can expect maximum service from

CENTRIPAC ROD PACKING Style No. 7

Made from long fibre asbestos yarn, plaited (not pressed) square, thoroughly lubricated and graphited, J-M Centripac has been, for many years, a preferred high-quality packing for centrifugal pumps and other equipment with rotating or oscillating rods. You can count on it to stand up against water — fresh, salt, hot or cold — oil, ammonia, brine, gasoline and some weak acids and chemicals.



Your Johns-Manville Representative will help, too! He will be glad to talk over your packing problems with you to help you get the most out of your packings . . . or to help you select the most efficient and long wearing packing for your job. Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS

RAILROAD MEN, THEMSELVES, WROTE THIS AD.

"Certainly"..."The necessity for improved Freight Car Cushioning..." "...appears absolutely necessary."

Here's what railway operating and claims prevention officials have to say about solving the lading damage problem (see *RR Age*, December 17, 1951, issue, page 44).

"Certainly, rough handling and hard riding cars are a real problem today."

"The necessity for improved freight car cushioning is emphasized when we consider the difficulty in eliminating overspeed impacts. Carriers have made little progress in this, even when we inaugurate speed checks in yards."

"Since we all have had such little success with overspeed impacts, it appears absolutely necessary that our equipment be improved with better draft gears."

"Our complaints (lading damage) have become more frequent with the advent of diesels and long, high-speed freight trains."

A.A.R. APPROVED unconditionally.

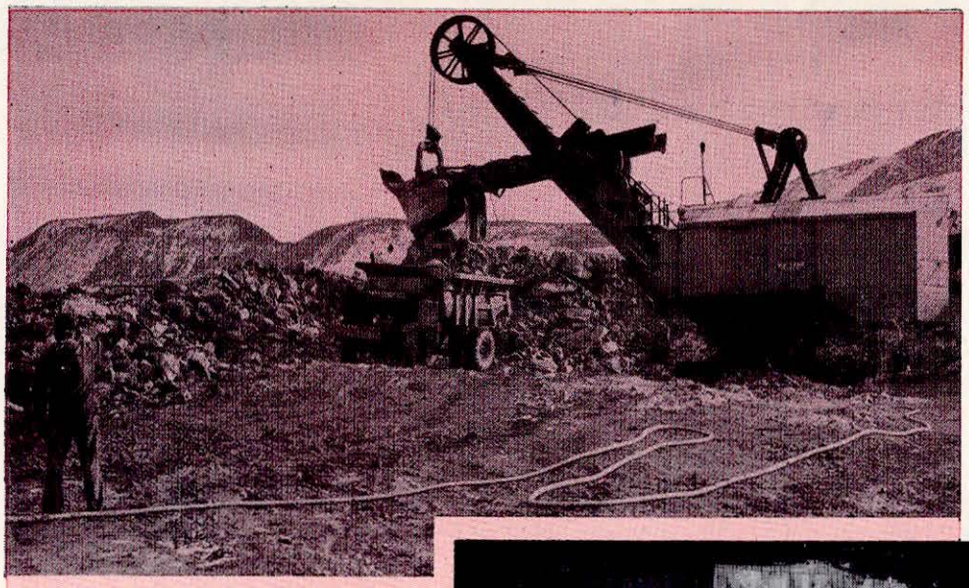
There is an answer to this problem. Equip all of your freight cars with Waughmat Twin Cushions and you'll definitely reduce both car and lading damage. Twin Cushions are service proven. Every user can point to lessened damage. Twin Cushions, the rubber double-action draft gear that never goes solid is the lowest cost big improvement you can make on any car. Can be easily applied to existing cars.

Write for our new brochure, THE CONQUEST OF IMPACT. It tells the story of Waughmat Twin Cushions.

WAUGHMAT *Twin Cushions*

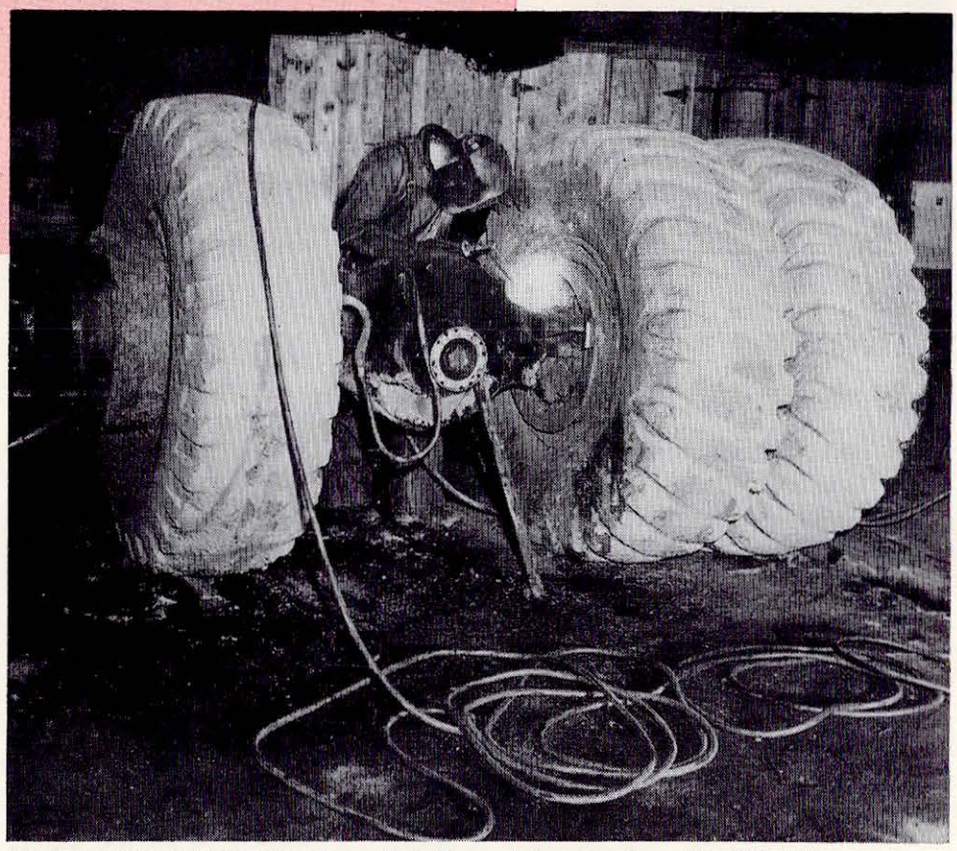
TRADE MARK REGISTERED

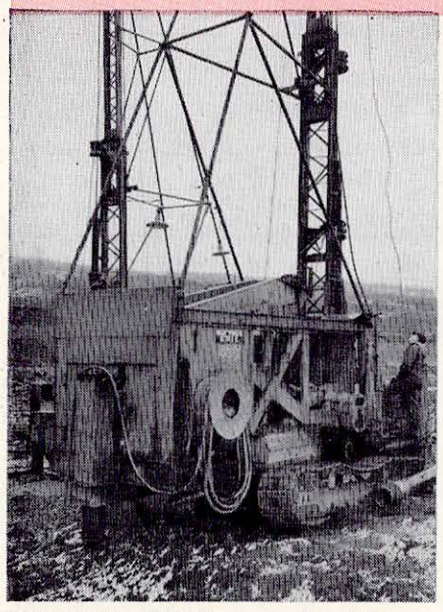
WAUGH EQUIPMENT COMPANY, 420 Lexington Ave., New York 17, N. Y. • Chicago — St. Louis • Canadian Waugh Equipment Company, Montreal



the rocks

NOTICE THE FLEXIBILITY of this No. 4, 5,000 volt AMERCLAD Cable. It contains a special crepe paper slipper applied over the conductors to permit easy bending.





HERE ARE the drills that punch out thousands of feet of holes every day. Notice how easily the cable can be coiled around the take-up reels.

THIS AMERCLAD WELDING CABLE is used at the maintenance shop. The 2/0 375 amp. cable is made up of 3,325 individual wires to provide super-flexible operation and ease the strain on the operator's wrists.

A STANDARD Cable for every

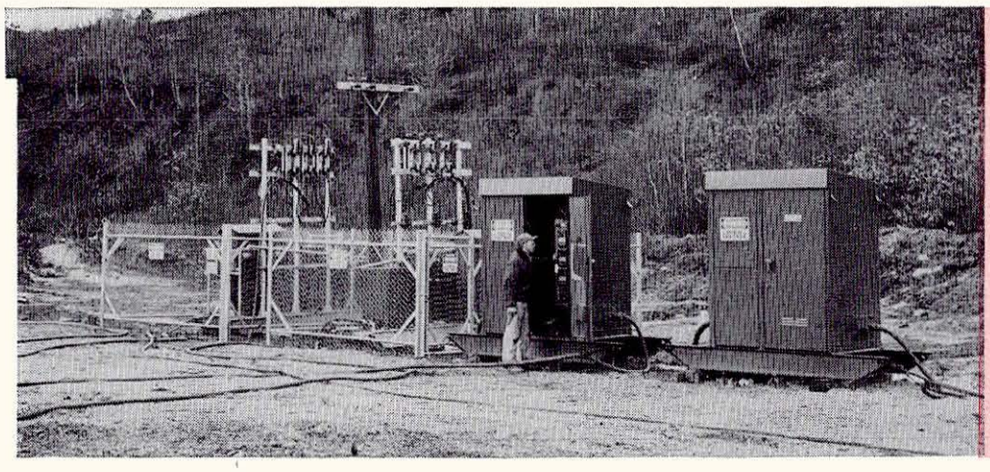
- paper & varnished cambric cables
- asbestos cords and cables
- aerial, underground & submarine cables
- shovel & dredge cables

AMERICAN STEEL & WIRE DIVISION
USS TRADE MARKS
AMERICAN ELECTRICAL WIRE AND CABLE
UNITED STATES STEEL

U·S·S AMERICAN ELECTRICAL

get so hot you can't touch them

but Amerclad withstands the heat



THESE ARE TYPICAL switch houses and portable substation at the mine. Average length of cable used is 2,500 feet. The company has been using the original AMERCLAD for 7 years.

ONE of the nation's leading coal producers is stripping an area that is honeycombed with old mines. Many of these mines are burning, some for as long as 20 years. The rocks get so hot that you cannot walk on them or touch them, but miles of U·S·S AMERCLAD lie on the blistering rock without damage. Naturally, the mine operators try to protect the cable, but a lot of it has to lie on the ground.

This mine uses about 11 miles of AMERCLAD heavy-duty portable cable for power shovels and drills. The cable is unavoidably pulled over razor-sharp rock, soaked in acid water and exposed to the direct rays of the sun. In addition, thousands of yards of dirt and rock are blasted every day, and a lot of it comes down hard on the cable.

Despite all this, the AMERCLAD Cable is turning in a fine record of service. *It has to*, because, as the Chief Engineer puts it, "Every time a shovel is idle, there is a loss of production that is never made up."

If you have an extremely abusive use for portable cable or cord, let us show you just what AMERCLAD can do. There is a standard AMERCLAD Cable or Cord for every special application—whether it's a hand-operated drill, or a river dredge. Just send the coupon.

AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL COMPANY
GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

SPECIAL Job!

- **oilproof portable cords**
- **plastic machine tool & building wire**
- **special purpose cords & cables**

WIRE & CABLE

SEND THE COUPON

American Steel & Wire Division
Room HE-92, Rockefeller Building, Cleveland 13, Ohio

☐ Please give me more information on U·S·S AMERCLAD.
☐ Have representative call.

Name.....
Title.....
Company.....
Address.....
City.....State.....

UNITED STATES STEEL

REVENUES AND EXPENSES OF RAILWAYS

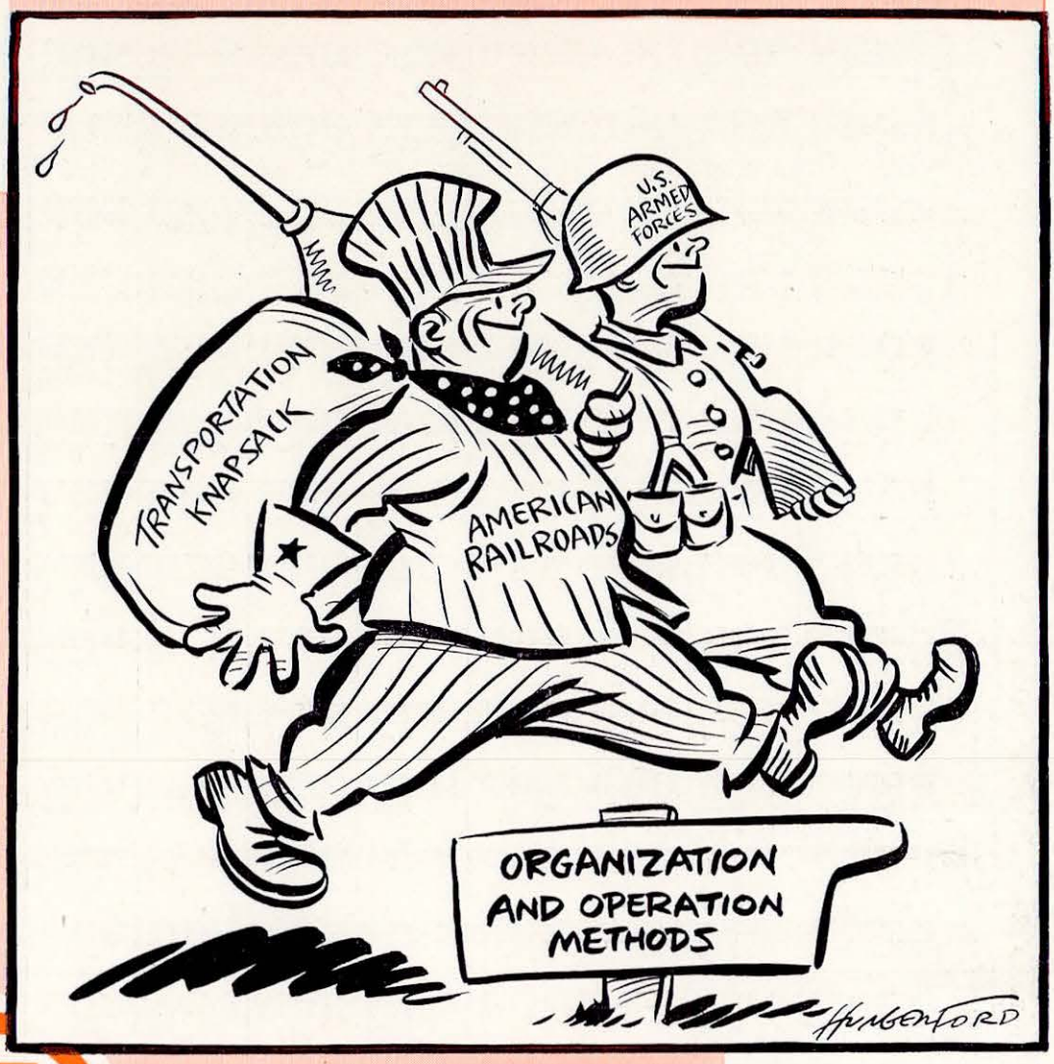
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Akron, Canton & Youngstown	July	171	$370	....	$382	$464	$78	$76	$6	$55	$49	$16	$33	$126	$323	$327	84.6	70.6	$59	$5	$47	$47
	7 mos.	171	3,062	....	3,141	3,245	513	485	44	382	321	109	255	947	2,317	2,214	73.8	68.2	824	323	379	369
Atchison, Topeka & Santa Fe	July	13,072	47,764	$5,551	57,779	43,537	8,680	12,852	684	8,736	10,985	1,693	1,075	15,783	36,433	43,767	63.1	100.5	21,346	11,074	9,804	—2,028
	7 mos.	13,073	281,876	34,859	348,004	320,885	49,655	55,238	4,849	63,696	64,304	11,683	8,057	108,497	244,538	249,400	70.3	77.7	103,466	58,341	42,904	27,063
Atlanta & St. Andrews Bay	July	82	285	2	295	297	40	28	2	18	19	4	9	65	149	132	50.5	44.5	146	72	42	50
	7 mos.	82	2,036	12	2,104	2,092	248	240	19	164	142	29	63	445	1,029	962	48.9	46.0	1,075	558	330	332
Atlanta & West Point	July	93	255	55	357	347	38	36	5	60	52	11	15	172	309	285	86.6	82.1	48	38	3	7
	7 mos.	93	1,969	346	2,663	2,623	326	342	37	415	388	79	105	1,121	2,138	2,168	80.3	82.7	525	295	136	75
Western of Alabama	July	133	277	53	368	346	52	50	6	63	67	15	15	142	294	293	79.8	84.4	74	49	39	8
	7 mos.	133	2,082	333	2,704	2,700	349	393	48	475	436	95	109	996	2,089	2,101	77.3	77.8	615	350	267	206
Atlantic & Danville	July	205	132	....	134	121	22	28	2	20	10	5	12	51	118	113	88.4	93.6	16	10	—11	—18
	7 mos.	205	1,097	....	1,113	1,012	239	196	13	92	67	33	80	363	857	780	76.9	77.0	257	69	55	54
Atlantic Coast Line	July	5,472	9,506	1,559	11,903	11,713	2,746	2,212	111	3,223	2,601	534	348	4,576	11,470	10,384	96.4	88.7	433	175	115	408
	7 mos.	5,472	82,529	14,140	104,145	93,930	17,017	19,648	887	19,721	17,686	3,691	2,527	34,853	78,531	79,139	75.4	84.3	25,614	15,500	7,717	4,022
Charleston & Western Carolina	July	343	481	2	497	560	145	124	5	121	83	42	19	184	483	414	97.1	73.9	14	10	15	67
	7 mos.	343	3,811	22	3,946	3,830	959	965	28	782	563	275	124	1,235	3,191	2,912	80.9	76.1	755	335	380	411
Baltimore & Ohio	July	6,187	25,121	2,126	29,390	36,059	3,741	4,788	430	6,402	7,863	979	800	13,200	25,648	29,490	87.3	81.8	3,741	292	2,416	2,974
	7 mos.	6,187	214,806	14,756	246,309	255,564	32,266	33,640	2,908	52,366	57,249	6,807	6,051	99,582	200,909	210,701	81.6	82.5	45,400	15,497	23,531	20,714
Staten Island Rapid Transit	July	29	259	59	322	280	61	48	10	29	40	2	2	162	286	269	88.7	96.0	36	37	—28	—43
	7 mos.	29	1,782	365	2,171	1,995	386	363	80	231	267	13	11	1,041	1,881	1,857	86.6	93.1	290	254	—138	—215
Bangor & Aroostook	July	602	598	49	693	609	250	223	19	209	189	73	19	229	768	712	110.9	116.9	—76	5	15	—29
	7 mos.	602	7,745	258	8,321	6,730	1,720	1,307	116	1,633	1,253	489	143	2,279	6,194	4,878	74.4	72.5	2,126	1,112	1,110	840
Bessemer & Lake Erie	July	212	1,019	....	1,038	3,012	110	285	19	263	842	120	18	255	740	1,807	71.3	60.0	298	318	248	531
	7 mos.	212	11,688	4	11,833	16,206	1,352	1,390	138	4,011	4,539	717	125	2,980	9,139	10,231	77.2	63.1	2,695	2,341	1,813	3,160
Boston & Maine	July	1,701	4,811	1,175	6,842	7,046	1,452	1,410	196	1,123	1,176	182	121	3,068	6,128	6,198	89.6	88.0	713	564	—94	—35
	7 mos.	1,701	37,875	6,961	50,757	50,967	9,523	9,066	1,288	7,959	8,298	1,209	814	21,952	42,544	42,460	83.8	83.3	8,213	4,119	1,900	1,816
Cambria & Indiana	July	35	56	....	56	106	20	15	1	59	82	22	....	16	102	128	180.7	121.0	—46	29	16	40
	7 mos.	35	891	....	891	928	119	83	9	564	572	134	1	154	890	887	99.9	95.6	1	448	344	403
Canadian Pacific Lines in Maine	July	234	231	52	317	360	130	120	5	78	60	8	8	161	393	375	123.8	104.2	—76	28	—150	—86
	7 mos.	234	3,804	357	4,372	4,147	864	726	35	701	585	58	54	1,696	3,413	2,946	78.1	71.0	959	203	233	592
Canadian Pacific Lines in Vermont	July	90	147	11	184	230	83	55	4	23	25	....	8	121	243	212	132.1	92.2	—59	13	—125	—47
	7 mos.	90	1,300	93	1,530	1,582	481	367	26	217	221	1	45	843	1,643	1,504	107.4	95.1	—113	91	—583	—393
Central of Georgia	July	1,786	2,759	215	3,269	3,134	607	567	67	618	549	123	131	1,414	2,974	2,953	91.0	94.2	295	211	110	—5
	7 mos.	1,786	21,349	1,587	25,351	25,335	4,182	4,657	314	4,275	4,284	732	919	10,647	21,428	22,327	84.5	88.1	3,923	2,020	1,532	727
Central of New Jersey	July	411	2,912	538	3,734	3,637	534	501	75	544	634	66	59	1,799	3,105	3,219	83.2	88.5	629	389	—144	—338
	7 mos.	411	19,576	3,343	25,005	24,910	3,448	3,337	509	4,357	4,340	549	410	12,636	22,031	22,285	88.1	89.5	2,974	2,843	—2,496	—2,660
Central of Pennsylvania	July	207	1,275	5	1,322	1,580	185	168	13	282	361	86	25	445	982	1,098	74.3	69.5	340	129	486	669
	7 mos.	207	10,998	38	11,399	11,023	1,248	1,177	102	2,485	2,639	527	180	3,281	7,487	7,804	65.7	70.8	3,912	846	4,933	4,719
Central Vermont	July	422	606	85	755	1,021	192	232	16	145	180	12	14	406	801	886	106.1	86.8	—46	45	—120	43
	7 mos.	422	5,425	446	6,332	6,692	1,281	1,231	116	1,154	1,140	87	110	2,916	5,762	5,523	91.0	82.5	570	311	—141	465
Chesapeake & Ohio	July	5,116	21,479	794	23,628	27,903	3,924	4,052	363	5,625	5,669	1,439	668	8,309	19,892	21,495	84.2	77.0	3,737	1,744	2,343	2,864
	7 mos.	5,116	190,063	5,173	205,164	203,391	29,169	27,366	2,436	42,645	39,267	9,933	4,369	66,222	151,281	147,924	73.7	72.7	53,883	27,679	29,004	25,495
Chicago & Eastern Illinois	July	868	2,201	321	2,773	2,712	393	385	30	468	401	123	117	1,038	2,183	2,077	78.7	76.6	590	184	314	284
	7 mos.	868	15,639	1,866	19,660	19,071	2,530	2,613	208	3,116	2,757	808	810	7,294	14,966	14,456	76.1	75.8	4,694	1,658	2,290	2,059
Chicago & Illinois Midland	July	130	402	....	434	648	33	107	7	96	168	21	28	207	403	553	92.8	85.4	31	27	—24	65
	7 mos.	130	3,763	1	3,885	5,414	453	728	53	1,035	1,147	146	200	1,392	3,373	3,844	86.8	71.0	513	291	33	751
Chicago & North Western	July	7,897	11,824	2,373	16,102	16,669	2,929	2,915	330	2,927	3,399	726	354	7,767	14,867	15,613	92.3	93.7	1,235	1,063	—501	—424
	7 mos.	7,910	84,912	13,233	111,601	113,664	18,902	18,284	2,357	22,211	22,400	5,179	2,460	54,025	103,534	103,424	92.8	91.0	8,067	7,411	—2,295	185
Chicago, Burlington & Quincy	July	8,773	19,630	1,936	23,763	20,448	3,957	4,196	429	3,527	3,190	700	454	8,205	16,970	16,352	71.4	80.0	6,792	3,493	2,906	1,465
	7 mos.	8,776	118,861	11,337	145,209	147,571	22,923	22,277	3,231	24,184	22,472	4,863	3,304	52,886	109,011	107,059	75.1	72.5	36,198	20,236	13,662	15,165
Chicago Great Western	July	1,474	2,640	31	2,850	2,500	511	466	39	368	416	119	114	935	2,083	1,974	73.1	78.9	767	293	214	86
	7 mos.	1,474	18,539	110	19,917	19,552	3,365	3,169	301	2,692	2,872	830	723	6,547	14,014	13,934	70.4	71.3	5,903	2,056	2,024	1,732
Chicago, Indianapolis & Louisville	July	541	1,505	60	1,678	1,660	319	304	15	302	278	64	86	638	1,441	1,387	85.8	83.5	238	78	60	78
	7 mos.	541	11,165	477	12,451	12,132	2,240	2,129	131	1,936	1,977	444	618	4,370	9,846	9,763	79.1	80.5	2,605	1,008	887	787
Chicago, Milw., St. Paul & Pacific	July	10,671	17,496	1,826	21,413	20,204	3,562	4,076	407	4,090	4,172	860	511	9,104	18,347	19,124	85.7	94.7	3,066	1,247	1,129	—219
	7 mos.	10,671	122,154	11,154	148,886	146,564	23,588	21,813	2,713	31,945	30,610	6,254	3,388	63,385	129,647	128,148	87.1	87.4	19,239	10,327	5,522	4,204
Chicago, Rock Island & Pacific	July	7,916	15,885	1,840	19,335	14,238	2,729	3,592	249	2,772	2,513	512	479	6,616	13,419	13,477	69.4	94.7	5,916	2,589	2,391	—95
	7 mos.	7,916	100,701	11,955	123,586	114,154	15,823	16,128	1,702	19,945	18,212	3,468	3,414	45,080	89,966	88,562	72.8	77.6	33,619	15,010	13,869	8,489
Chicago, St. Paul, Minn. & Omaha	July	1,617	2,303	222	2,782	2,674	497	487	43	392	394	88	61	1,337	2,423	2,501	87.1	93.5	360	175	—11	—204
	7 mos.	1,617	15,527	1,285	18,600	18,375	3,076	3,087	317	2,989	3,065	617	458	9,719	17,147	17,807	92.2	96.9	1,453	1,260	—1,239	—1,924
Clinchfield	July	317	1,768	....	1,778	1,634	297	271	22	355	306	80	41	373	1,103	1,042	62.1	63.7	675	215	565	568
	7 mos.	317	13,769	10	13,852	13,676	2,005	1,894	127	2,319	2,236	567	290	3,054	7,921	7,685	57.2	56.2	5,931	1,498	5,279	5,658

(Table continued on next left-hand page)

Brothers Under the Skin **By Hungerford**



Watch for other railroad cartoons by Mr. Hungerford

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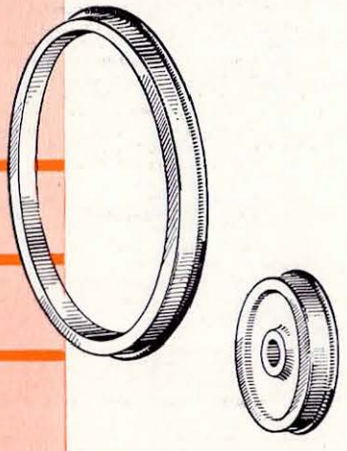
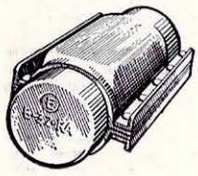
PITTSBURGH, PENNA.

EDGEWATER STEEL COMPANY



SERVING AMERICA'S RAILROADS WITH ROLLED STEEL TIRES, WHEELS and DRAFT GEARS



REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1952

Name of road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Colorado & Southern	July	736	932	91	1,149	1,410	155	211	27	179	197	31	29	462	881	971	76.7	68.9	268	123	158	160
	7 mos.	736	7,210	560	8,662	8,862	1,041	1,099	135	1,421	1,424	242	200	3,194	6,252	6,453	72.2	72.8	2,410	1,420	922	737
Ft. Worth & Denver	July	1,038	1,452	185	1,797	1,857	258	246	35	244	238	34	58	669	1,324	1,342	73.7	72.3	473	159	210	223
	7 mos.	1,038	11,338	1,121	13,610	12,427	2,088	1,876	215	1,712	1,731	219	391	4,964	9,834	9,407	72.3	75.7	3,776	1,326	1,693	1,151
Colorado & Wyoming	July	40	12	....	86	286	9	30	2	22	27	11	1	22	62	189	71.8	66.1	24	15	—54	32
	7 mos.	40	822	....	1,503	1,916	154	439	18	221	201	69	8	585	1,036	1,570	68.8	81.9	468	246	121	163
Columbus & Greenville	July	168	95	....	100	143	24	45	4	27	37	6	4	40	111	150	111.5	104.5	—11	6	—4	—12
	7 mos.	168	992	....	1,035	1,199	228	301	25	201	218	41	29	329	915	1,033	88.4	86.2	120	138	40	58
Delaware & Hudson	July	793	3,553	202	3,921	4,693	743	792	51	850	1,043	142	81	1,678	3,561	3,990	90.8	85.0	361	175	223	331
	7 mos.	793	30,343	1,164	32,650	33,791	4,703	4,543	452	6,728	6,933	999	578	12,576	26,021	26,369	79.7	78.0	6,629	3,413	3,558	3,533
Delaware, Lackawanna & Western	July	962	5,095	839	6,611	7,079	957	892	134	1,369	1,318	300	166	3,155	5,910	6,019	89.4	85.0	701	341	440	474
	7 mos.	963	41,685	5,774	52,659	50,984	5,897	5,728	935	10,082	9,536	2,061	1,159	23,107	42,156	41,705	80.1	81.8	10,504	5,516	5,176	3,815
Denver & Rio Grande Western	July	2,333	5,135	349	5,729	5,812	962	1,053	87	1,082	999	237	176	2,068	4,591	4,418	80.1	76.0	1,139	663	428	603
	7 mos.	2,333	39,202	1,967	42,814	41,408	6,156	5,684	624	7,843	7,481	1,611	1,228	14,417	31,647	29,808	73.9	72.0	11,166	6,249	4,861	5,569
Detroit & Mackinac	July	232	174	....	177	221	43	45	1	24	22	9	4	39	125	127	70.8	57.3	52	31	22	34
	7 mos.	232	1,123	2	1,154	1,439	301	285	19	144	145	60	30	269	817	775	70.8	53.9	337	195	157	247
Detroit & Toledo Shore Line	July	50	413	....	424	532	71	67	2	55	60	19	14	172	324	353	76.5	66.4	100	22	14	36
	7 mos.	50	4,246	....	4,328	4,455	540	505	24	429	407	127	99	1,355	2,514	2,568	58.1	57.6	1,813	658	551	477
Detroit, Toledo & Ironton	July	464	1,100	....	1,152	1,440	203	229	20	302	250	67	28	366	952	975	82.7	67.7	200	104	88	214
	7 mos.	464	9,643	3	10,142	11,188	1,380	1,475	180	2,394	1,755	467	197	2,734	7,147	6,791	70.5	60.7	2,995	1,583	1,259	1,886
Duluth, Missabe & Iron Range	July	569	1,089	2	1,315	7,968	585	623	105	482	728	148	9	669	1,881	3,809	143.1	47.8	—567	151	—752	1,190
	7 mos.	568	14,177	7	16,485	29,015	4,252	4,350	470	4,453	4,874	614	64	7,285	16,957	19,930	102.9	68.7	—472	1,488	—1,883	2,702
Duluth, South Shore & Atlantic	July	539	499	9	538	630	161	153	9	127	125	20	22	241	571	584	106.1	92.6	—33	32	—83	—17
	7 mos.	539	4,021	49	4,289	4,722	886	862	60	981	828	140	163	1,640	3,804	3,375	88.7	82.1	485	198	98	373
Duluth, Winnipeg & Pacific	July	175	348	2	356	372	99	78	4	77	72	2	5	179	367	319	103.0	85.8	—11	29	—78	—19
	7 mos.	175	3,703	8	3,753	3,077	567	491	29	540	452	15	37	1,618	2,811	2,309	74.9	75.0	941	278	192	186
Elgin, Joliet & Eastern	July	236	1,109	....	1,346	4,510	238	496	22	381	672	101	35	551	1,346	2,973	100.0	65.9	....	Cr. 128	—104	350
	7 mos.	236	19,985	....	24,948	31,475	2,560	2,950	214	4,606	4,647	704	236	9,605	18,049	20,094	72.3	63.8	6,899	2,710	941	2,446
Erie	July	2,242	9,925	681	11,792	13,849	2,336	2,316	226	2,030	2,288	480	355	5,744	11,031	11,770	93.6	85.0	760	21	344	1,064
	7 mos.	2,242	85,375	4,436	97,811	102,184	13,608	13,341	1,579	15,904	15,761	3,262	2,469	40,865	77,303	78,631	79.0	76.9	20,509	8,899	8,376	9,903
Florida East Coast	July	571	1,322	466	1,971	1,809	371	338	43	484	451	64	75	890	1,990	1,867	101.0	103.2	—19	Cr. 160	64	—52
	7 mos.	571	14,948	5,219	22,303	19,035	2,571	2,379	288	3,506	3,110	521	519	7,907	15,868	14,394	71.1	75.6	6,436	1,902	3,247	2,337
Georgia Railroad	July	323	666	48	771	742	100	111	9	144	120	26	33	342	654	616	84.8	83.0	118	38	111	95
	7 mos.	323	4,923	256	5,647	5,549	815	847	62	902	857	181	233	2,357	4,559	4,384	80.7	79.0	1,087	275	958	967
Georgia & Florida	July	360	358	....	362	326	106	67	4	38	32	7	24	117	303	220	83.7	67.4	59	21	8	62
	7 mos.	360	2,119	....	2,147	2,051	628	567	25	247	229	52	131	642	1,755	1,615	81.7	78.7	392	131	92	167
Grand Trunk Western	July	952	3,188	263	3,775	3,939	809	894	48	523	803	91	68	1,898	3,480	4,020	92.2	102.1	295	324	—339	—561
	7 mos.	952	28,005	1,496	31,956	33,531	5,216	4,984	351	5,780	6,188	636	517	14,684	27,403	27,407	85.8	81.7	4,553	2,093	641	2,586
Can. Natl. Lines in New Engl	July	172	130	25	179	210	97	72	9	61	54	....	3	121	300	295	167.4	140.9	—121	24	—186	—149
	7 mos.	172	1,250	57	1,601	1,613	493	390	62	404	337	1	19	1,007	2,057	1,815	128.5	112.5	—456	165	—922	—655
Great Northern	July	8,314	16,928	1,393	19,654	21,579	4,024	3,921	291	3,422	3,276	649	383	6,936	15,599	15,677	79.4	72.7	4,055	1,793	1,719	2,192
	7 mos.	8,314	113,552	8,443	131,913	135,160	26,017	25,240	2,137	25,803	23,904	4,265	2,776	48,409	108,717	105,472	82.4	78.8	23,196	13,051	7,935	8,981
Green Bay & Western	July	224	277	....	285	297	77	116	5	33	40	15	18	96	238	275	83.5	92.8	47	25	4	6
	7 mos.	224	2,097	....	2,156	2,379	513	638	38	271	262	99	143	603	1,636	1,750	75.9	73.5	519	284	119	282
Gulf, Mobile & Ohio	July	2,766	6,576	426	7,495	6,896	1,179	1,265	85	1,370	1,308	245	269	2,238	5,406	5,237	72.1	75.9	2,089	943	766	595
	7 mos.	2,814	45,979	2,848	52,233	49,881	8,490	8,250	663	9,251	9,369	1,683	1,802	15,143	37,105	36,995	71.0	74.2	15,128	7,078	5,785	4,941
Illinois Central	July	6,539	18,616	1,941	22,610	22,786	3,888	4,145	343	2,992	3,708	749	477	8,276	16,696	17,954	73.8	78.8	5,914	3,416	2,112	1,568
	7 mos.	6,539	139,746	13,096	170,210	165,325	27,225	27,400	2,526	28,142	29,314	5,124	3,444	62,556	128,507	129,985	75.5	78.6	41,703	23,636	14,965	16,093
Illinois Terminal	July	447	939	75	1,162	1,050	168	155	26	167	153	34	40	448	881	852	75.8	81.2	282	139	96	70
	2 mos.	453	5,774	530	7,096	6,996	1,071	1,020	185	1,104	1,048	240	285	2,943	5,788	5,563	81.6	79.5	1,307	684	479	555
Kansas City Southern	July	891	3,089	151	3,565	3,329	388	360	33	481	466	85	91	1,095	2,189	2,065	61.4	62.0	1,376	527	596	487
	7 mos.	891	23,608	1,053	26,937	25,777	2,977	2,614	227	3,275	3,227	597	606	7,774	15,489	14,881	57.5	57.7	11,448	5,350	4,548	4,302
Kansas, Oklahoma & Gulf	July	327	584	1	590	471	120	100	6	28	34	9	26	138	335	294	56.7	62.4	255	142	82	73
	7 mos.	327	4,092	4	4,132	3,811	702	439	43	272	250	61	183	906	2,234	1,837	54.1	48.2	1,898	982	671	804
Lake Superior & Ishpeming	July	156	138	....	165	511	38	54	9	53	43	11	2	58	164	259	99.8	50.7	....	29	—17	108
	7 mos.	156	1,285	....	1,532	2,181	352	359	65	400	344	77	14	496	1,343	1,455	87.7	66.7	188	209	33	289
Lehigh & Hudson River	July	96	225	....	226	256	49	46	2	28	26	9	12	79	178	168	78.6	65.9	48	18	16	27
	7 mos.	96	1,839	....	1,844	1,912	309	286	16	207	175	60	89	587	1,264	1,175	68.5	61.4	581	235	229	256
Lehigh & New England	July	184	627	....	636	706	77	80	6	128	112	38	11	186	437	424	68.8	60.1	199	128	131	151
	7 mos.	184	4,707	....	4,748	4,902	511	698	45	896	799	260	81	1,304	3,040	3,123	64.0	63.7	1,708	1,055	1,040	1,004
Lehigh Valley	July	1,218	4,578	332	5,237	6,232	923	839	55	1,060	1,116	196	135	2,442	4,819	4,943	92.0	79.3	417	29	348	795
	7 mos.	1,220	39,225	2,291	43,961	44,438	5,639	5,956	597	7,612	8,208	1,314	981	17,400	33,388	34,738	75.9	78.2	10,573	4,391	5,884	5,205
Long Island	July	365	1,060	3,554	4,841	5,185	611	610	87	838	847	120	14	2,141	3,768	4,102	77.8	79.1	1,073	512	313	387
	7 mos.	365	7,704	21,006	30,383	30,674	4,284	4,278	602	5,506	5,978	828	104	16,449	27,518	27,964	90.6	91.2	2,864	3,426	—2,196	—2,303

(Table continued on next left-hand page)

G-E Floodlighting Adds Speed, Safety to Your Yard Operations

GENERAL ELECTRIC YARD LIGHTING HELPS YOU TO:

- **increase car movement at night**
- **increase security from theft**
- **increase safety for yard personnel**
- **increase protection to rolling stock and lading.**

These are some major benefits gained when the Nickel Plate installed four floodlight towers, each carrying 15 G-E 1000-watt lamps, in its principal Cleveland yards. Ask your G-E representative to show you how General Electric yard lighting can improve your operations. *General Electric Company, Schenectady 5, N.Y.* 152-33

You can put your confidence in—

GENERAL ELECTRIC

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	1951
Louisiana & Arkansas	July	756	2,003	63	2,137	1,971	389	387	20	256	216	74	67	590	1,374	1,312	64.3	66.6	763	327	355	210
	7 mos.	756	14,214	445	15,238	13,648	2,482	2,659	143	1,824	1,565	491	494	4,066	9,378	9,003	61.5	66.0	5,860	2,703	2,674	1,487
Louisville & Nashville	July	4,765	13,450	1,271	16,024	17,126	2,921	2,777	250	3,943	3,831	693	335	6,535	14,399	14,383	89.9	84.0	1,624	1,332	984	1,262
	7 mos.	4,765	112,176	8,254	129,460	127,155	19,151	18,555	1,570	28,340	27,231	4,617	2,361	46,953	101,417	101,762	78.3	80.0	28,043	17,913	13,945	10,905
Maine Central	July	981	1,712	172	2,132	2,000	488	455	51	387	360	65	23	794	1,770	1,645	83.1	82.2	361	194	126	136
	7 mos.	981	14,006	924	16,097	15,259	3,036	2,825	210	2,694	2,657	475	146	5,602	12,018	11,391	74.7	74.7	4,079	2,114	1,625	1,575
Midland Valley	July	334	186	....	188	186	47	61	6	20	19	3	5	62	140	155	74.2	83.5	49	14	28	5
	7 mos.	334	1,170	....	1,189	1,226	355	332	42	146	118	18	35	439	1,023	945	86.0	77.1	167	109	—1	62
Minneapolis & St. Louis	July	1,402	1,692	7	1,765	1,650	343	291	8	292	268	76	125	639	1,506	1,339	85.3	81.2	259	110	100	80
	7 mos.	1,405	11,908	35	12,349	11,962	2,188	2,301	172	1,992	1,863	512	836	4,105	9,880	9,708	80.0	81.2	2,470	1,353	890	624
Minn., St. Paul & S. Ste. Marie	July	3,223	3,355	157	3,728	3,530	852	856	45	582	636	93	75	1,370	3,020	3,113	81.0	88.2	707	242	387	286
	7 mos.	3,224	20,664	594	22,598	22,051	4,915	4,790	328	4,828	4,573	669	537	9,305	20,452	20,010	90.5	90.7	2,146	1,613	361	466
Mississippi Central	July	148	193	....	197	214	48	43	2	27	24	3	13	82	180	144	91.3	67.3	17	9	....	27
	7 mos.	148	1,526	—1	1,551	1,521	312	290	15	187	196	23	92	452	1,112	1,043	71.7	68.6	440	219	150	182
Missouri & Illinois	July	172	429	....	433	368	84	86	4	67	105	21	9	129	301	317	69.5	86.1	132	77	60	33
	7 mos.	172	2,966	1	2,993	2,979	513	452	26	503	483	142	60	826	1,967	1,839	65.7	61.7	1,026	596	495	440
Missouri-Kansas-Texas Lines	July	3,242	6,231	366	7,146	5,082	1,041	1,485	172	1,082	895	224	252	2,506	5,185	5,379	72.6	105.8	1,961	879	764	—29
	7 mos.	3,242	41,786	2,611	48,532	43,902	6,880	7,005	823	7,003	6,582	1,561	1,766	17,188	35,064	34,749	72.2	79.2	13,468	5,964	5,438	3,301
Missouri Pacific	July	6,950	19,145	1,159	22,252	18,073	3,554	3,934	302	4,127	4,445	714	458	7,570	16,359	16,960	73.5	93.8	5,893	2,391	2,797	528
	7 mos.	6,950	119,045	7,265	140,068	132,301	23,164	23,166	1,892	26,666	26,963	4,896	3,176	51,337	108,838	109,475	77.7	82.7	31,229	11,832	15,659	10,693
International-Great Northern	July	1,104	2,477	204	2,932	3,154	635	639	34	568	555	100	60	1,188	2,586	2,668	88.2	84.6	345	71	203	218
	7 mos.	1,104	18,589	1,373	21,880	21,904	4,623	4,604	248	3,973	3,754	701	407	8,576	18,507	18,331	84.6	83.7	3,374	317	1,623	1,561
Gulf Coast Lines	July	1,727	3,171	103	3,486	3,510	772	704	44	580	553	99	87	1,215	2,809	2,697	80.5	76.8	677	16	491	343
	7 mos.	1,727	23,694	645	25,929	25,419	5,205	5,211	308	3,848	3,960	653	617	8,366	19,045	19,202	73.4	75.5	6,884	2,488	3,135	2,546
Monongahela	July	178	444	....	454	619	70	88	10	60	89	8	1	204	342	408	75.4	66.0	112	Cr. 12	—3	—83
	7 mos.	178	4,634	....	4,660	5,126	623	619	79	567	607	53	8	1,753	3,016	3,073	64.7	59.9	1,644	311	287	552
Montour	July	51	61	....	62	126	18	65	3	51	73	17	1	41	122	213	197.5	169.0	—60	8	10	—11
	7 mos.	51	1,240	....	1,242	1,435	142	203	18	520	600	118	6	551	1,290	1,480	103.8	103.1	—48	250	255	169
Nashville, Chatt. & St. Louis	July	1,032	2,846	179	3,376	2,929	617	644	45	481	484	128	110	1,158	2,484	2,440	73.6	83.3	892	478	451	225
	7 mos.	1,032	20,007	1,118	23,335	21,901	4,027	3,945	340	3,383	3,272	871	797	8,025	17,071	16,760	73.2	76.5	6,264	3,209	3,107	2,437
New York Central	July	10,718	40,114	10,386	57,748	63,087	7,554	7,707	834	12,537	12,637	2,310	1,090	26,156	50,503	54,353	87.5	86.2	7,245	5,250	1,101	2,446
	7 mos.	10,711	321,696	72,546	451,061	457,705	61,464	60,705	6,558	95,795	95,164	15,707	7,512	204,971	392,353	400,556	87.0	87.5	58,707	36,061	15,735	10,508
Pittsburgh & Lake Erie	July	221	1,390	68	1,550	3,994	295	484	40	717	1,563	250	72	844	2,146	3,747	138.4	93.8	—596	70	263	416
	7 mos.	221	21,956	528	23,652	28,692	3,095	3,523	289	7,399	8,669	1,673	509	8,999	21,575	24,303	91.2	84.7	2,076	2,888	4,504	4,625
New York, Chicago & St. Louis	July	2,184	9,759	149	10,294	12,418	1,742	1,584	139	1,727	2,076	322	315	4,232	8,451	9,028	82.1	72.7	1,343	992	765	1,443
	7 mos.	2,186	83,525	1,243	87,746	90,892	11,132	10,553	997	14,528	15,392	2,295	2,151	31,625	62,519	62,701	71.2	70.1	25,227	12,898	10,921	12,189
New York, New Haven & Hartford	July	1,793	6,544	4,530	12,434	12,940	1,659	2,025	263	2,118	2,130	375	205	5,711	10,441	10,664	84.0	82.4	1,993	924	254	461
	7 mos.	1,793	52,579	29,976	92,903	90,223	14,178	13,797	1,906	14,767	14,810	2,609	1,367	36,671	75,001	73,724	80.7	81.7	17,902	7,250	4,924	3,778
New York Connecting	July	21	310	....	333	307	107	124	25	20	19	....	....	101	230	209	69.2	68.1	102	77	41	55
	7 mos.	21	2,146	....	2,334	1,955	598	665	176	196	115	....	....	587	1,402	1,272	60.1	65.1	932	576	437	388
New York, Ontario & Western	July	541	513	27	559	595	155	145	22	87	89	23	25	265	564	594	100.8	99.9	—4	39	—108	—103
	7 mos.	541	3,795	36	3,976	4,266	826	791	160	579	611	160	179	1,825	3,624	3,798	91.2	89.0	352	253	—326	—269
New York, Susquehanna & Western	July	120	347	38	404	422	56	59	5	56	54	11	9	205	348	340	86.3	80.5	55	31	—24	33
	7 mos.	120	2,725	268	3,143	3,218	397	379	39	418	371	79	61	1,396	2,460	2,334	78.3	72.5	683	220	218	352
Norfolk & Western	July	2,135	11,844	551	13,143	14,853	2,273	2,343	296	2,743	3,008	598	295	4,027	10,042	11,015	76.4	74.2	3,101	2,319	1,563	1,729
	7 mos.	2,135	103,931	3,184	113,013	113,312	16,278	15,960	2,056	25,688	23,714	4,111	2,088	34,027	82,412	80,248	72.9	70.8	30,600	21,587	14,600	15,793
Norfolk Southern	July	643	869	....	884	976	200	175	13	111	104	24	49	280	714	710	80.7	72.8	170	81	57	66
	7 mos.	643	6,671	....	6,777	6,549	1,388	1,194	92	834	789	163	334	2,106	5,185	4,912	76.5	75.0	1,591	743	539	505
Northern Pacific	July	6,881	12,631	712	14,445	13,613	2,827	2,409	412	2,940	2,963	410	300	5,516	12,308	11,817	85.2	86.8	2,136	1,530	852	892
	7 mos.	6,885	83,484	4,211	95,426	93,333	17,276	15,215	2,099	19,926	19,140	2,829	2,125	38,023	82,180	77,845	86.1	83.4	13,245	9,766	5,645	6,815
Northwestern Pacific	July	331	1,102	6	1,143	930	245	227	16	116	109	4	6	468	852	754	74.5	81.0	291	149	31	21
	7 mos.	331	7,212	50	7,489	6,450	1,827	1,580	122	745	739	29	38	2,877	5,603	5,332	74.8	82.7	1,887	821	269	123
Oklahoma City-Ada-Atoka	July	132	85	....	86	82	23	23	2	4	5	....	2	21	55	54	63.7	66.4	31	15	9	9
	7 mos.	132	671	....	677	670	166	154	17	32	31	....	13	160	400	374	59.1	55.8	277	124	78	88
Pennsylvania	July	10,120	46,008	12,725	65,711	84,755	5,922	11,379	1,445	13,180	18,812	2,947	1,260	32,076	55,723	71,278	84.8	84.1	9,988	5,216	3,145	4,877
	7 mos.	10,120	420,711	93,619	572,266	589,218	75,185	73,288	9,612	27,564	148,549	18,161	9,206	255,902	491,524	513,217	85.9	87.1	80,742	39,131	32,124	26,529
Pennsylvania-Reading Seashore Lines	July	364	542	409	984	1,184	215	210	26	112	103	15	11	700	1,071	1,067	108.8	90.1	—87	133	—363	—131
	7 mos.	364	4,158	1,252	5,618	5,863	1,489	1,549	178	674	659	108	75	3,929	6,417	6,651	114.2	113.4	—799	807	—2,482	—2,405

(Table continued on next left-hand page)

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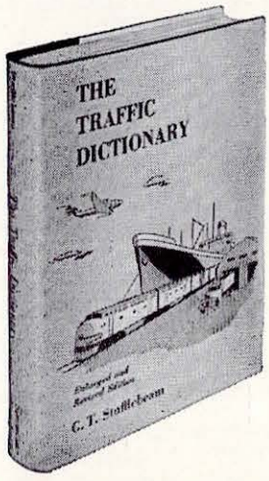

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Manager, Transportation Research, Remington-Rand

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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1952

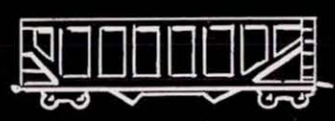
Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Pittsburg & Shawmut	July	97	160	....	163	181	36	33	4	51	40	9	4	45	148	139	90.7	77.0	15	6	37	39
	7 mos.	97	1,236	....	1,243	1,397	225	205	39	374	355	62	25	345	1,035	1,026	83.3	73.4	208	40	356	302
Pittsburgh & West Virginia	July	132	416	....	441	678	90	165	24	131	186	36	50	158	457	620	103.7	91.4	—16	Cr. 14	30	59
	7 mos.	132	4,509	....	4,573	5,041	743	984	164	1,189	1,211	240	358	1,257	3,731	4,129	81.6	81.9	842	486	647	728
Reading	July	1,321	7,325	534	8,425	10,129	1,459	2,196	178	1,714	2,153	418	150	3,512	7,244	8,924	86.0	88.1	1,181	583	818	706
	7 mos.	1,322	64,521	4,020	73,278	73,950	10,740	11,295	1,427	14,678	15,424	2,774	1,056	29,005	58,210	59,959	79.4	81.1	15,068	8,031	7,886	7,083
Richmond, Fredericksburg & Potomac	July	118	1,224	648	2,135	2,208	366	388	24	295	282	65	21	688	1,501	1,516	70.3	68.7	635	351	208	189
	7 mos.	118	10,838	4,458	17,448	16,236	2,378	2,022	166	2,118	1,937	455	145	5,100	10,760	10,233	61.7	63.0	6,688	3,673	2,174	2,017
Rutland	July	397	341	21	431	456	83	75	10	70	78	13	21	229	429	399	99.6	87.6	2	25	—38	6
	7 mos.	397	2,590	134	3,246	3,374	571	591	67	578	578	101	138	1,605	3,070	3,179	94.6	94.2	176	202	—143	—162
Sacramento Northern	July	264	169	....	174	252	41	52	7	13	25	4	2	79	146	185	84.1	73.4	28	15	—9	30
	7 mos.	264	1,400	....	1,438	1,854	457	395	74	104	207	28	16	595	1,237	1,323	86.0	71.4	201	103	—33	268
St. Louis-San Francisco	July	4,601	8,758	591	10,133	9,944	1,685	1,822	201	1,708	1,843	472	302	3,705	7,888	8,532	77.8	85.8	2,245	976	1,131	558
	7 mos.	4,601	61,169	4,187	71,140	69,853	11,770	11,845	1,264	12,149	12,081	3,362	2,062	26,359	55,776	56,037	78.4	80.2	15,364	7,417	7,875	6,224
St. Louis, San Francisco & Texas	July	159	494	8	529	403	46	51	3	39	36	1	19	151	266	271	50.2	67.1	264	162	46	26
	7 mos.	159	2,978	49	3,221	2,779	353	341	44	259	256	7	140	1,075	1,911	1,889	59.3	68.0	1,310	514	426	200
St. Louis Southwestern	July	1,569	5,209	37	5,456	5,719	812	924	87	685	765	99	160	1,577	3,423	4,100	62.7	71.7	2,033	785	1,011	550
	7 mos.	1,569	40,016	257	41,951	40,419	5,181	5,080	433	4,491	4,925	667	1,148	11,671	23,825	25,194	56.8	62.3	18,126	9,754	6,761	5,231
Seaboard Air Line	July	4,145	9,367	1,147	11,321	11,203	1,676	1,819	176	2,353	2,108	614	362	3,761	8,681	8,643	76.7	77.2	2,641	1,210	1,530	1,224
	7 mos.	4,145	80,454	10,124	97,731	89,644	14,749	14,839	1,215	17,013	15,437	3,972	2,576	31,324	69,609	66,941	71.2	74.7	28,122	12,745	13,511	9,889
Southern	July	6,306	17,632	1,946	21,023	20,005	2,913	2,931	296	3,962	4,529	775	435	7,157	15,391	16,203	73.2	81.0	5,633	3,179	2,296	1,621
	7 mos.	6,306	129,583	12,426	153,836	148,511	20,666	20,786	1,786	29,389	29,271	5,271	3,066	51,939	111,424	111,943	72.4	75.4	42,411	22,794	17,610	14,759
Alabama Great Southern	July	326	1,259	111	1,481	1,564	240	244	16	360	447	81	36	504	1,204	1,332	81.3	85.2	276	204	95	85
	7 mos.	326	9,576	680	11,182	11,250	1,676	1,642	134	2,678	2,808	567	239	3,660	8,703	9,120	77.8	81.1	2,479	1,676	829	800
Cinn., New Orleans & Texas Pacific	July	337	3,068	210	3,454	3,640	459	477	32	890	916	186	72	881	2,419	2,614	70.0	71.8	1,035	701	447	469
	7 mos.	337	22,987	1,549	25,943	25,732	3,194	3,188	250	6,027	5,570	1,240	500	6,896	17,534	17,106	67.6	66.5	8,409	5,525	3,528	3,664
Georgia Southern & Florida	July	397	564	72	696	651	160	143	9	70	82	10	8	230	485	474	69.7	72.8	211	47	38	38
	7 mos.	397	4,211	701	5,393	4,894	1,133	1,135	53	492	474	69	56	1,645	3,474	3,371	64.4	68.9	1,919	593	471	349
New Orleans & Northeastern	July	203	869	66	998	1,080	156	141	16	135	168	27	18	218	574	631	57.5	58.4	424	282	127	153
	7 mos.	203	5,975	417	6,839	7,607	1,054	1,124	104	885	905	191	133	1,635	4,028	4,251	58.9	55.9	2,811	1,851	879	1,093
Southern Pacific	July	8,102	39,562	3,761	46,594	42,658	6,227	4,968	526	9,735	8,819	1,555	846	18,359	37,292	34,184	80.0	80.1	9,302	3,700	4,163	2,376
	7 mos.	8,121	264,086	27,259	313,368	291,015	36,888	33,251	3,790	63,417	58,578	10,740	5,759	117,186	237,440	223,540	75.8	76.8	75 928	37,826	31,920	22,791
Texas & New Orleans	July	4,291	9,629	757	11,174	10,687	1,800	1,747	130	1,489	2,024	89	255	4,360	8,479	9,121	75.9	85.3	2,695	915	929	355
	7 mos.	4,291	74,078	5,201	84,998	79,063	13,175	12,866	877	12,298	13,057	614	1,810	29,879	61,098	62,122	71.9	78.6	23,900	10,498	7,376	5,317
Spokane International	July	152	259	1	273	220	60	47	2	23	20	8	5	71	170	141	62.4	64.0	103	25	59	35
	7 mos.	152	1,515	8	1,605	1,474	428	388	16	148	133	57	34	459	1,144	1,015	71.3	68.9	461	102	262	206
Spokane, Portland & Seattle	July	944	2,282	112	2,547	2,789	451	425	50	385	369	94	29	800	1,758	1,677	69.0	60.1	789	271	395	487
	7 mos.	937	15,589	680	17,306	17,145	2,865	2,743	432	2,298	2,133	640	193	5,436	11,424	10,793	66.0	63.0	5,882	2,144	3,123	3,406
Tennessee Central	July	286	366	5	395	422	86	97	5	65	65	20	12	136	319	337	80.7	80.0	76	26	18	22
	7 mos.	286	2,748	21	2,936	2,912	700	618	37	469	484	136	82	987	2,390	2,324	81.4	79.8	546	180	152	193
Texas & Northern	July	8	97	....	108	130	4	9	....	10	13	2	1	25	44	56	41.0	43.2	64	34	18	22
	7 mos.	8	675	....	751	793	40	116	1	62	78	17	7	165	306	445	40.8	56.1	445	222	138	101
Texas & Pacific	July	1,834	5,736	416	6,748	6,591	1,020	947	89	1,260	1,008	253	185	2,155	4,942	4,734	73.2	71.8	1,805	679	819	786
	7 mos.	1,834	40,657	2,787	47,355	44,290	6,796	6,104	770	7,900	6,819	1,765	1,258	14,997	33,215	31,141	70.1	70.3	14,140	5,835	6,313	5,038
Texas Mexican	July	162	307	....	322	249	58	65	9	31	32	8	8	65	181	185	56.3	74.1	141	61	53	21
	7 mos.	162	1,955	....	2,080	1,925	493	456	45	226	224	58	58	421	1,336	1,309	64.2	68.0	744	326	265	230
Toledo, Peoria & Western	July	239	470	....	480	450	109	130	6	52	45	9	45	120	359	384	74.8	85.4	121	47	24	38
	7 mos.	239	3,845	....	3,904	3,957	673	696	43	346	287	64	306	890	2,458	2,470	63.0	62.4	1,446	668	490	438
Union Pacific	July	9,843	34,538	3,908	41,821	39,628	7,128	6,688	1,117	7,186	7,623	1,180	863	14,965	32,477	32,723	77.7	82.6	9,344	5,895	1,645	568
	7 mos.	9,857	229,783	23,674	276,528	277,597	43,890	40,267	3,669	52,409	53,356	8,164	6,632	100,884	219,355	214,919	79.3	77.4	57,173	38,839	10,338	13,075
Utah	July	110	72	....	73	93	21	18	2	44	34	7	1	33	107	98	148.2	104.7	—35	10	—21	5
	7 mos.	110	811	....	814	583	155	119	14	341	323	44	6	412	967	799	118.7	136.9	—152	77	—152	—203
Virginian	July	611	2,947	2	3,073	3,121	491	479	60	764	879	173	45	767	2,162	2,233	70.4	71.6	911	577	459	500
	7 mos.	611	25,872	13	26,911	25,326	3,475	3,001	408	6,284	5,610	1,206	320	6,247	16,997	15,118	63.2	59.7	9,914	5,883	4,959	4,843
Wabash	July	2,393	7,712	445	8,876	8,020	1,252	2,110	165	1,289	1,195	344	280	3,728	6,928	7,779	78.1	97.0	1,947	761	791	—267
	7 mos.	2,393	56,632	2,928	64,526	63,686	8,650	9,331	878	8,970	8,482	2,375	2,009	26,665	48,836	48,686	75.7	76.4	15,690	6,676	6,128	4,668
Ann Arbor	July	294	340	....	350	794	111	151	17	114	107	30	24	127	393	647	112.3	81.5	—43	Cr. 52	—3	52
	7 mos.	294	4,712	....	4,778	5,378	778	658	118	824	751	210	182	2,048	3,967	3,957	83.0	73.6	811	330	380	548
Western Maryland	July	836	2,361	10	2,562	3,497	286	524	43	597	766	173	81	982	2,145	2,701	83.7	77.2	416	271	364	470
	7 mos.	836	25,038	64	26,572	27,649	3,175	3,795	310	5,835	5,494	1,214	581	8,646	19,483	19,663	73.3	71.1	7,089	4,153	4,352	4,676
Western Pacific	July	1,193	3,886	341	4,339	3,949	937	640	66	642	705	74	157	1,317	3,290	3,059	75.8	77.5	1,049	510	426	282
	7 mos.	1,193	26,601	1,902	29,229	30,823	5,085	4,282	479	4,560	4,574	780	1,260	9,083	21,621	20,677	74.0	67.1	7,607	3,947	3,192	4,183
Wisconsin Central	July	1,046	2,070	77	2,301	2,509	427	365	37	389	451	65	65	1,041	2,032	2,086	88.3	83.1	269	152	—12	152
	7 mos.	1,046	15,787	318	17,124	17,527	2,647	2,444	264	3,142	3,279	453	398	7,389	14,410	14,342	84.1	81.8	2,714	1,048	700	877

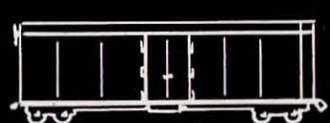
Standard

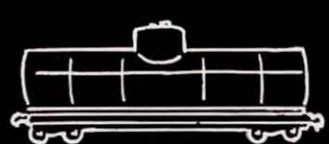
FOR ALL FREIGHT CARS

Standard Coupler Positioning Device with Height Adjustment

The New Standard Coupler Device







THE Standard Coupler Positioning Device with Height Adjustment and the Standard Coupler Device is a combination which multiplies coupler life and efficiency.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK

HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL

BUILT FOR TODAY'S GREATER POWER NEEDS

THE IMPROVED Exide-Ironclad BATTERY

for ALL storage battery jobs in ALL railway applications

IT'S OUTSTANDING... in design, performance, length of life. Back of the improved Exide-Ironclad battery are years of progressive research-engineering that have developed a continuous flow of improvements. *Now comes another great advancement*...

A NEW and EXCLUSIVE FEATURE—the polyethylene insulating tube sealer. This and other major improvements combine to make Exide-Ironclad, *more than ever before*, YOUR BEST BATTERY BUY . . . AT ANY PRICE.

BUILT TO GIVE YOU...

LONG, TROUBLE-FREE PERFORMANCE . . . LOW OPERATING COSTS . . . LOW MAINTENANCE COSTS . . . LOW DEPRECIATION COSTS . . . INHERENT SAFETY . . . HIGH AVAILABILITY . . . CLEAN, QUIET, VIBRATIONLESS OPERATION.

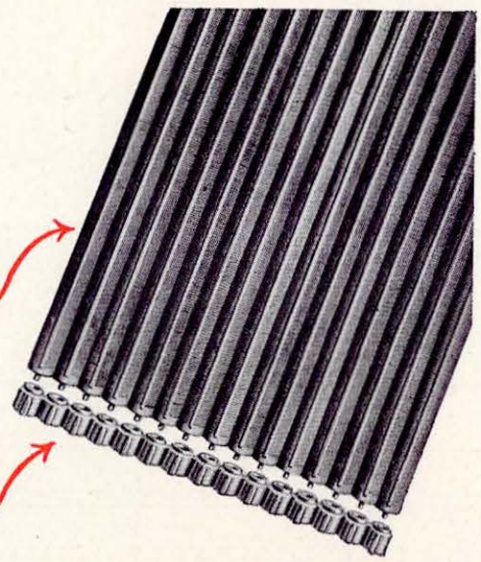
BECAUSE OF...

IMPROVED POSITIVE PLATE CONSTRUCTION

. . . the long-life grids now contain SILVIUM—an alloy of silver, lead and other components—which make them highly corrosion resistant. Top conducting bar is heavier.

. . . with the new Polyethylene insulating tube sealer

An insulating sealer for the bottom of the tubes. Acid-proof, non-corroding plastic, it fits snugly into slotted tubes of positive plate, and reduces loss of active material. Even the small sediment deposit of the past is reduced 50%. Thus, more active material remains available, and the high battery capacity is sustained for longer working life.



YOUR BEST POWER BUY..

PERMANIZED NEGATIVE PLATES

Improved processing, a result of Exide Quality Control assures uniform plates with higher electrical efficiency. These negatives, teamed with the improved positive plates, give you a well-balanced combination for hard service and long life.

NEW SEALING COMPOUND

Through the cooperative efforts of Exide Laboratories and the Franklin Institute, a new homogeneous compound was developed. It makes a permanent seal between the jar and cover, resisting shock without cracking in high or low temperatures.

SEAMLESS SHOCK-PROOF JAR

Made of high quality rubber. A scientifically selected combination of tensile strength and elongation provides a sturdy jar built for long life and heavy-duty service.

CORROSION RESISTANT TRAY GUARD

A plastic acid-resistant steel tray coating with high insulating quality and ability to withstand hard knocks.

NEW UNBREAKABLE PLASTIC VENT PLUGS

Made of unbreakable polyethylene. Can be quickly and easily removed to add water.

Types and sizes for storage battery applications in all heavy-duty services.

Write today for further information.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 2
Exide Batteries of Canada, Limited, Toronto

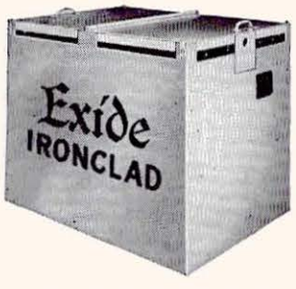
"EXIDE - IRONCLAD" "SILVIUM" and "PERMANIZED" *Reg. T.M. U.S. Pat. Off.*

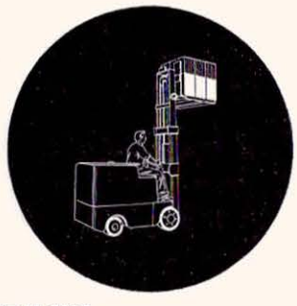
FOR DIESEL STARTING

• Quick breakaway • Fast acceleration • High power reserve • Interchangeable sizes

FOR CAR LIGHTING AND AIR-CONDITIONING

• Ample power for steady lights, cool cars • Uninterrupted service • Meets all space and electrical requirements

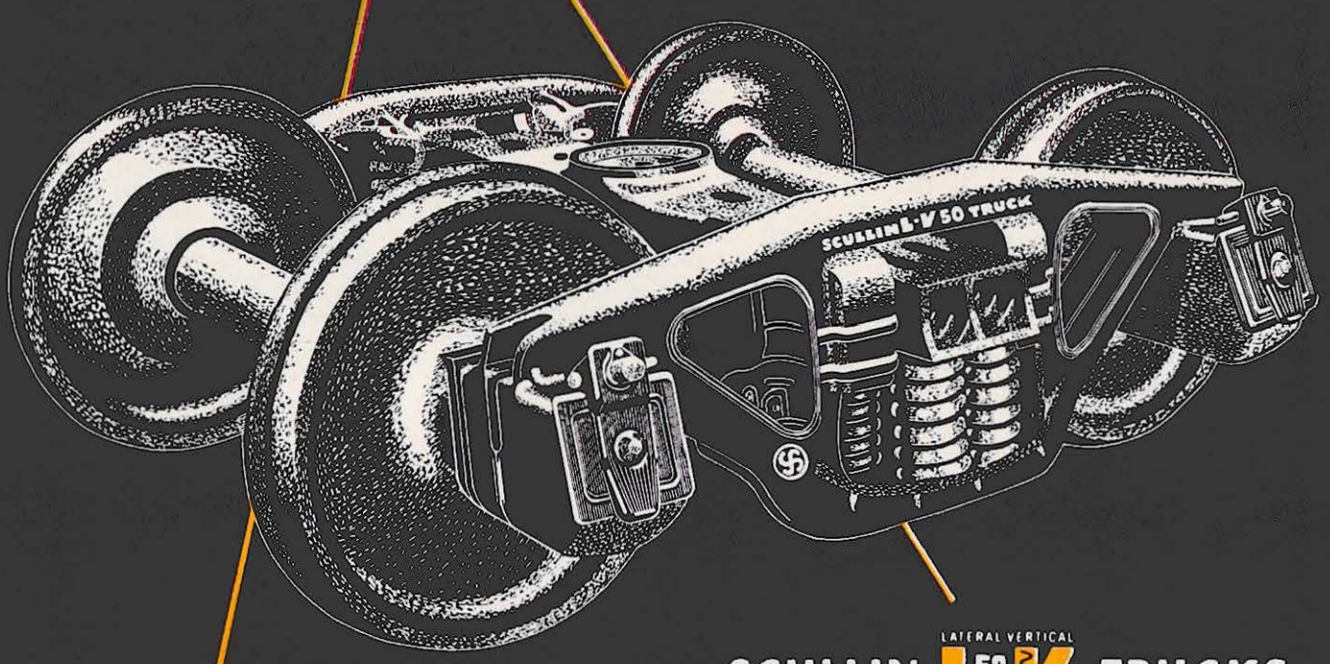




FOR BATTERY-ELECTRIC TRUCKS

• Rapid, accurate handling • Uniform rate of handling • High maneuverability • Sizes for all makes of battery-electric trucks

. . AT ANY PRICE



LATERAL VERTICAL
SCULLIN L 50 V TRUCKS
CUSHIONED MOTION

THE SMOOTHEST TRAFFIC-BUILDERS
BETWEEN LCL AND YOUR RAILS

STEEL CASTINGS MANUFACTURED

NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.

Photo courtesy Canadian Pacific Railway . . .

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

Above — Two views of Drawing Rooms in The Morning Congressional, The Senator and The Afternoon Congressional cars, showing Met-L-Wood doors, partitions and trim.

in Budd-Built Passenger Cars for Pennsylvania Railroad's New "Congressionals" and "Senator"

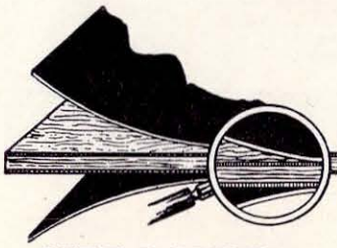
● Met-L-Wood used in the Pennsylvania Railroad's Budd-Built passenger cars for The Morning Congressional, The Senator and The Afternoon Congressional has these important advantages for builders, railroads and passengers:

Fabrication with Met-L-Wood is fast . . . Prefabricated doors, partitions and panels simplify assembly and save labor costs . . . and standard Met-L-Wood panels can be drilled, sawed, tapped or routed without special tools.

Lighter weight, as compared with equivalent all-steel construction, reduces overall car weights, lowers gravity centers—makes for lower operation and maintenance costs.

Inherent beauty of Met-L-Wood is backed by vibration damping, sound deadening and insulating qualities to add to passenger comfort in smart, modern surroundings.

Details on Met-L-Wood uses in passenger cars, baggage cars and cabooses will be furnished promptly on request.



MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

MET-L-WOOD • *STRONG... LIGHT... Smooth Finish... Sound Deadening... Fire-Resisting... Insulating*

To assure highest mileage and utmost safety at high speeds

"Nickel Plate Road" uses U·S·S MULTIPLE-WEAR WROUGHT STEEL WHEELS

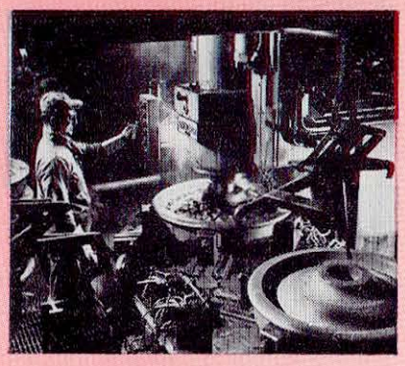
U·S·S WROUGHT STEEL WHEELS

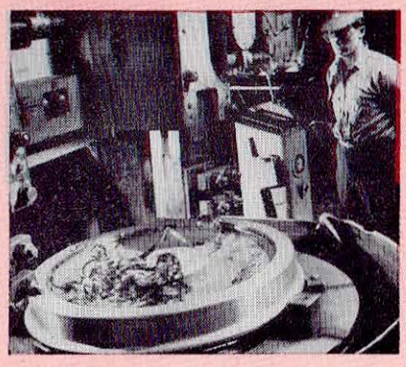
One-Wear Freight Car Wheels
Multiple-Wear Freight Car Wheels
Passenger Car Wheels

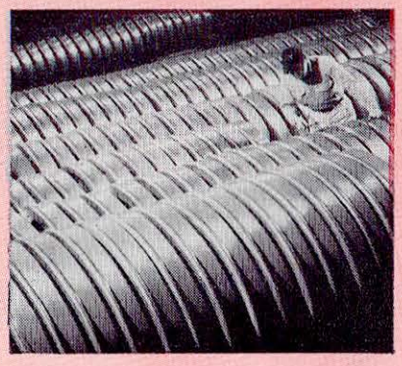
Diesel Locomotive Wheels
Steam Locomotive Wheels
Electric Locomotive Wheels

Tender Truck Wheels
Electric Transit Wheels
Crane Track Wheels

THIS IS ONE of 2500 70-ton hopper cars, equipped with U·S·S Multiple-Wear Wheels, built for the New York, Chicago & St. Louis Railroad in recent years. Their reputation for dependability in service has made U·S·S Multiple-Wear Wheels the favorites wherever heavy hauling is done.







Here are a few reasons why U·S·S Wrought Steel Wheels are better . . .

● On this recently developed semi-automatic wheel boring mill—the last word in speed and precision—wheel hubs are rough bored ¼" less than finished bore, or are finished bored to customer specifications.

● They're made right. On modern high speed machine tools like this, wheels are accurately machined to specified tolerances.

● A careful check of essential dimensions is the final inspection step that makes sure that U·S·S Wrought Steel Wheels meet customers' specifications. You get only the best.

on 3,000 70-ton cars

THE heavier wheel loads now carried, the greater distances traveled, and the high speed at which railroad equipment must move today have put a premium on wheel durability and safety.

That's why so many of the country's railroads like the New York, Chicago & St. Louis are installing U·S·S Multiple-Wear Wrought Steel Wheels on their heavy-duty equipment. These rugged wheels are good for the long run . . . *deliver more ton-miles per dollar than any other type wheel.* Here's why . . .

U·S·S Multiple-Wear Wrought Steel Wheels keep replacement cost *way* down. They're built to take the punishment of impact at high speeds and long, severe braking. Turned out in shops equipped with modern heat treating, forging and machining facilities U·S·S Wrought Steel Wheels are carefully controlled in every step of manufacture from the melting of the steel to the finished product. And they're backed by 47 years of wheel-making experience.

U·S·S Wrought Steel Wheels can be furnished either rim toughened or entirely quenched for other high-duty service. And two complete wheel shops—one at McKees Rocks (Pittsburgh), Pennsylvania, and the other at Gary, Indiana—make it possible to meet your requirements for steel wheels more efficiently . . . and more promptly.

The next time you order wheels for new equipment or for replacements, specify U·S·S Multiple-Wear Wrought Steel Wheels. No finer wheels are available anywhere.

THIS IS ONE of 500 70-ton gondola cars built for the Nickel Plate Road. Because years of hard, fast service are ahead for this car, it rolls on long-life U·S·S Multiple-Wear Wrought Steel Wheels. You can't get any better.

USS

UNITED STATES STEEL COMPANY, PITTSBURGH, PA. · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

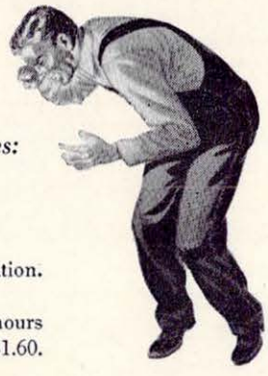
U·S·S WROUGHT STEEL *High-Duty* WHEELS

2-966

UNITED STATES STEEL

Short or Long Term CAPITAL LOSS?

No matter how they are figured—
eye accidents are costly to industry.
Here are some of the estimated charges:



1 They cost nearly $400 in average compensation.

2 They cost $176,000,000 in lost man hours annually at an average per hour rate of $1.60.

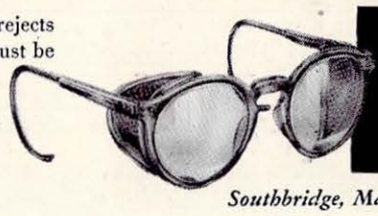
3 They cost an unknown but sizeable sum in idle machine time. (Remember, industry invests $6,000 or more in tools to provide each job.)

4 They cost another appreciable sum in impaired worker morale.

5 They cost additional money in increased rejects and lowered output when green workers must be substituted for skilled.

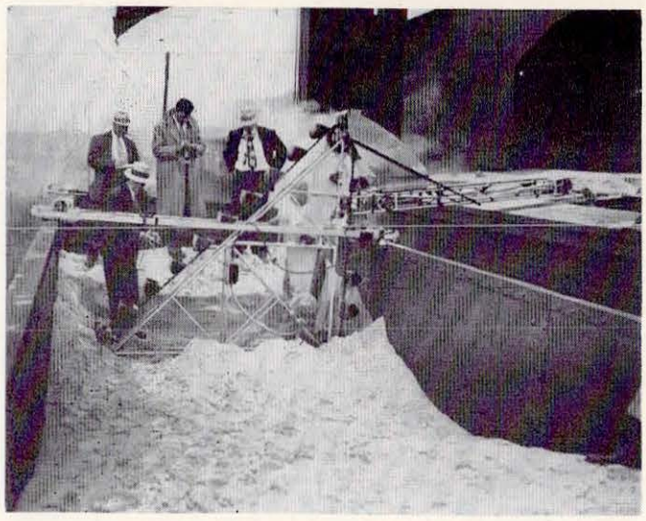
6 They cost money in first aid and medical attention whether the eye injury is major or minor.

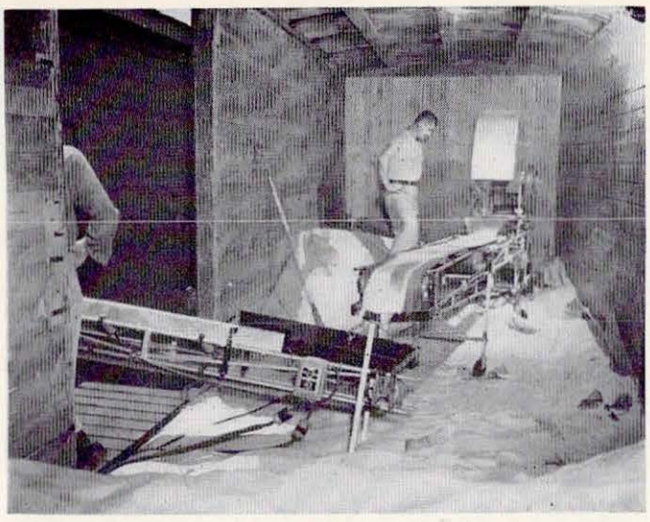
Any industrial eye accident is a capital loss. If you lose the skill of a valued worker through the loss of an eye, you have a long-term capital loss in a very real sense—with no gain, long or short, to compensate. Contact your nearest AO Branch Office and learn how an AO Eye Protection Program can practically eliminate these costs and pay for itself in less than six months. Or write American Optical Company, 459 Vision Park, for free booklet "Improved Industrial Vision" which tells how AO's Industrial Vision Program cuts costs, increases production, decreases accidents.



American Optical
COMPANY
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities





Gondola and Box Car Unloaders

The Rajon Company of Maywood Cal., has designed two lightweight bulk materials unloaders for one-man operation. The machines, one for box cars and one for gondolas, are combination bucket carrier-belt conveyor units built of high tensile aircraft type steel. They will handle sand, gravel, grain, slack coal, gypsum, salt, or similar small-aggregate material. Both machines are normally equipped with 1-hp. 110-v. or 220-440-v. sealed electric motors, but for locations without electric power, a Salsbury Gripmaster gasoline power unit may be substituted.

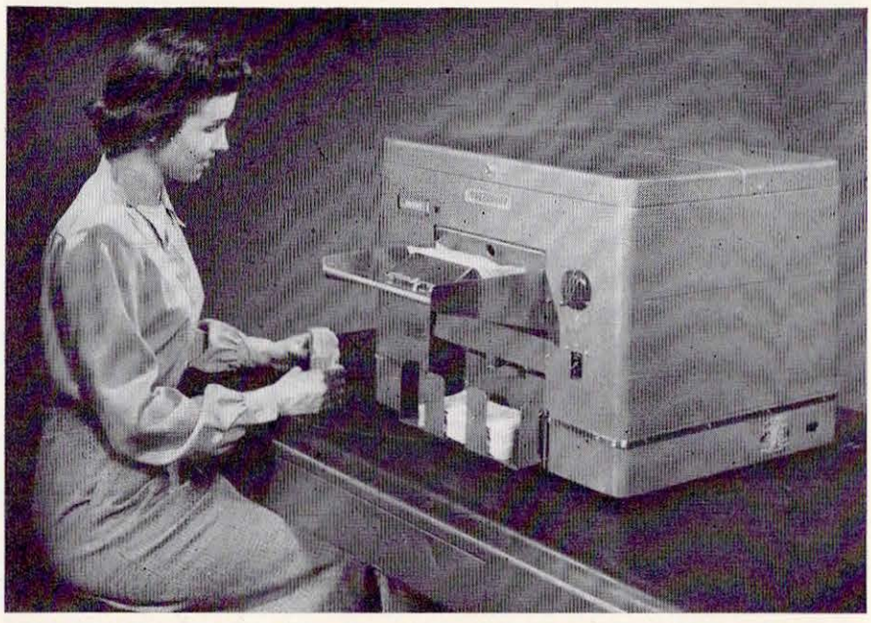
The gondola unloader rides on the rim of the car. It weighs 650 lbs. and will adjust from top of car load level to the floor. A fully loaded 50-ton car can be emptied in about three hours, according to the manufacturer. The box car unit may be moved freely within the car.

A conveying system—that may be retracted or extended in operation—carries material to the car door whence a companion conveyor removes the material to the unloading area. This machine is supported on large casters and weighs 675 lbs. Bucket carriers and belt conveyors on both units are of a standard design. The gondola unit has been tested by several railroads. M. F. I., Inc., Chicago 10, is exclusive national distributor.

Sound for Silent Films

A new system for converting 16-mm. silent films into sound motion pictures, called "Soundstripe," has been developed by Bell & Howell Co., Chicago. The development permits magnetic recording and playback of sound directly from standard silent (double-sprocket) film.

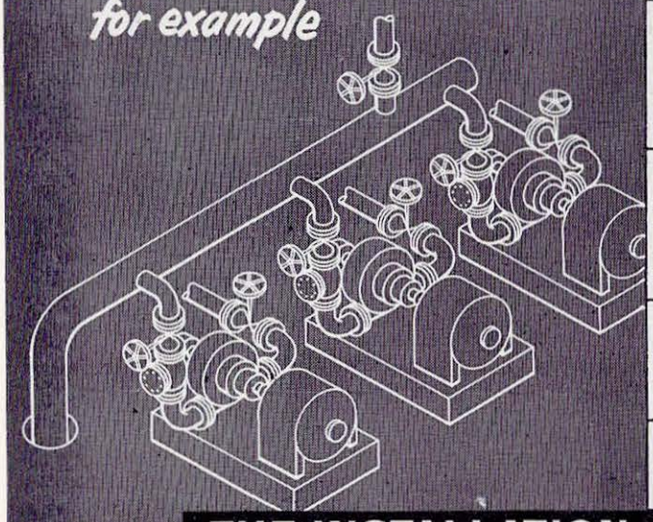
Films taken with any type of silent 16-mm. camera magazine or roll film can be striped for magnetic sound. Old films may be similarly treated. The cost is about 3½ cents per film foot. Formerly it was possible only to place magnetic sound tracks on reprints of silent films made on sound-type (single-sprocket) film. This cost about 12½ cents per film foot. Sounds are placed on the track of the new "Soundstripe"-equipped film with projectors equipped for magnetic recording (*Railway Age*, March 31, page 24). Conversion for "Soundstripe" of magnetic recording projectors now in the field can be handled by the factory.



The Recordak "Bantam Microfilmer," produced by the Recordak Corporation, Rochester 4, N. Y., can film check-size documents at a rate of approximately 500 per minute. Each foot of film records 290 documents of such dimensions. Lenses are interchangeable for reductions of 40:1, 32:1, 24:1, or 19:1. At the two higher reductions, only half (8 mm.) of the 16-mm. film width is exposed on the first run. The roll then is reversed and documents recorded down the other side. At lower reductions the full width of the film is utilized. The Bantam accepts documents up to 11 in. wide and of any length.

Can You Trust Your Checks to Hold Like This?

. . . on Water Pumps, for example



THE INSTALLATION

Crane Iron Body Swing Check Valves in 8-inch vertical lines on discharge side of water pumps supplying a large eastern paper mill.

VALVE SERVICE RATINGS

SUITABILITY: Working smoothly - no complaints

FEATURES: O.K. for either horizontal or upward flow

MAINTENANCE COST: None - no maintenance needed to date

SERVICE LIFE: Now better than other checks used

OPERATING RESULTS: No water or head loss

PRICE: In line with other makes

AVAILABILITY: Stock item - Crane product

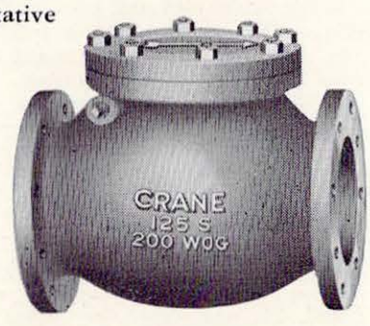
THE HISTORY

The mill depends on these pumps for all water. Loss of head at the pumps would create a serious problem. The mill could take no such risks. Regularly, the check valves on pumps were replaced, but only to be found leaking between pumping cycles, a few months later.

It's now more than a year since the change-over was made to Crane Check Valves. There's been no loss of water, no maintenance or replacement of any checks on the pumps. That was proof enough for the mill, that Crane Quality means better valves —greater dependability and bigger value. As a result, 3 more of these checks were installed on a separate battery of suction pumps.

THE VALVE

Crane No. 373, 125-Pound Iron Body Swing Check Valves, brass trimmed. The long life and high seating efficiency of these checks, in 2 to 8-in. sizes, is in large part due to the Crane patented flexible disc-hinge design. Double spring mounting eliminates lost motion between parts, yet permits true, full contact of disc and seat at every closure. Also serves to absorb the shock of seating under back-flow pressure. See your Crane Catalog or Crane Representative for full details.



The Complete Crane Line Meets All Valve Needs. That's Why

More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois

Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

How to Maintain Intermediate Wheel Shops Along the Way

Keep Wheel Truing Carbide Wheel Cutters as standard equipment at store houses along the way. Then you can true wheels or flanges in 20 minutes, thus avoiding the need to take a locomotive 150 miles more or less to have the wheels corrected.

By taking down flanges ¼" periodically with the Fcc-21, your wheels should be good for a year rather than making "seconds" of them in two turnings. *Prove this to yourself* by filling in the coupon and mailing it now.

50 years of Service to the Railroad Industry

WHEEL TRUING BRAKE SHOE CO.
628 West Baltimore Avenue
Detroit 2, Michigan

Gentlemen:
Please send us further information on how we can maintain our wheels along the way.

*Name*_____
*Title*_____
*Company*_____
*Street*_____
*City*_____ *Zone*_____ *State*_____

RA

Benchmarks and Yardsticks

A FEW RAILROADS have published instructive booklets on letter-writing—a recent excellent one being that of the Southern Pacific Company. There are, or should be, recognized standards for all usual jobs—and letter-writing is one which is seldom done as well as it could be.

The central rule for letter-writing is do the job in simple and direct language. If people would write as they talk, there wouldn't be many poor letters. But too many of us tend to get formal and pompous when we write, and the result is the stuff now called "gobbledegook," but for which there is a standard word, "jargon." For instance—

"Re your letter eighteenth—propositions contained in same have been given extended consideration and in reply would say . . . ."

That's "gobbledegook" or "jargon" which, being translated into English, means:

"I have read your letter of the eighteenth and here's what I think of your proposals . . . ."

The great teacher, Sir Arthur Quiller-Couch, warned* that such words as the following are often symptoms of jargon—*case, instance, character, nature, condition, persuasion, degree.* In jargon a man "is conveyed to his place of residence in an intoxicated condition." In English he "is taken home drunk."

The Southern Pacific's instructive booklet on letter-writing points out advantages to the man who will take the trouble to learn how to write effective letters, among them (a) making friends for himself and his company; (b) anticipating objections and avoiding frictions; (c) *developing* his personality and his capacity to influence people favorably; and (d) helping the writer to think and express himself clearly.

How does it happen that, among men holding important positions in industry, it is usually almost impossible from their writing or their conversation to distinguish those with the college educations from those without? It is evident that the thinking and talking and writing that a man does after he is 24 years of age have more to do with his capacity—and the impression he makes—when he is 40 or 50 than how he spent his time prior to age 24, whether at school or at work.

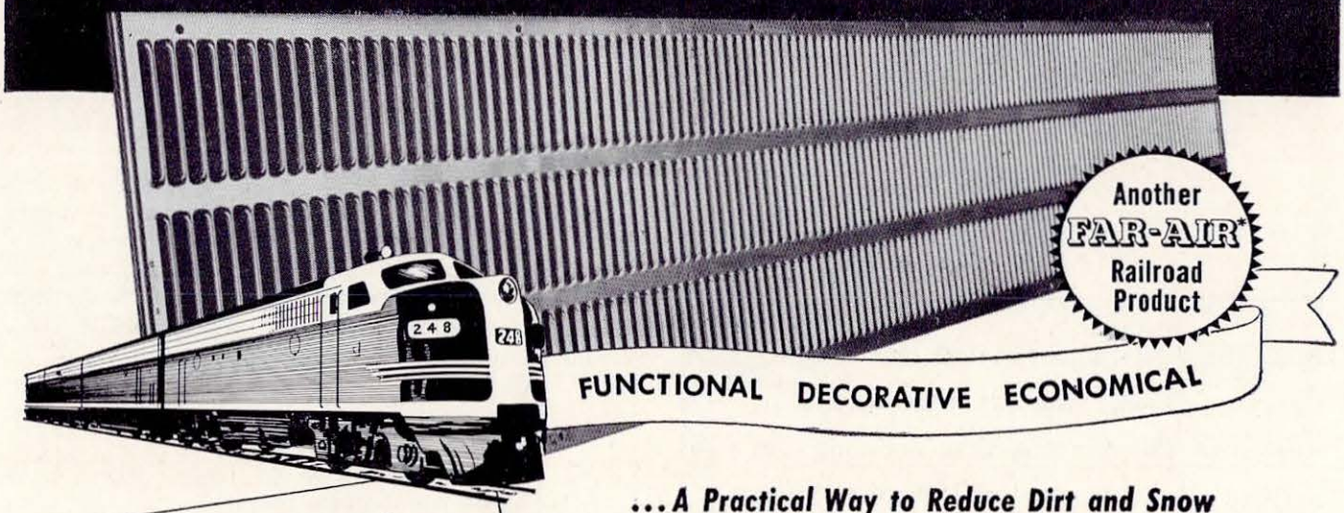
Talking or writing simply and directly is the best practice there is for straight thinking, and straight thinking is the best help there is to professional advancement.

Your reporter doesn't claim innocence in this area, but he keeps on trying—thanks to the incentive he gets from the missionaries of the writing profession, and in particular those who have produced "Better Letters" for the Southern Pacific Company.

J. G. L.

* "On the Art of Writing," published by G. P. Putnam's Sons.

FAR-AIR* DYNAMIC GRILLE



...A Practical Way to Reduce Dirt and Snow Loads in Air Filtering Systems!

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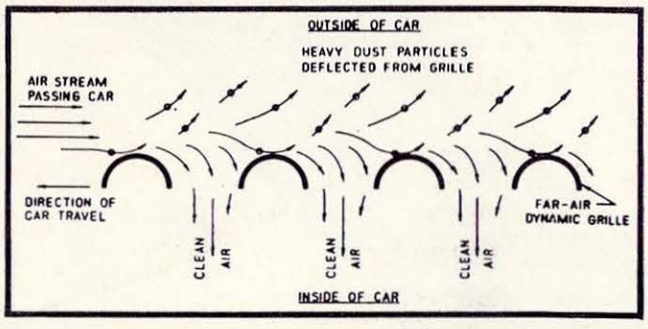

Far-Air Dynamic Grilles are practical for a number of applications and can be furnished in a variety of sizes. Qualified field engineers are available to discuss your particular requirement. Write today for complete data on the Dynamic Grille and other railroad products. Farr Company, P.O. Box 10187 Airport Station, Los Angeles 45, California.

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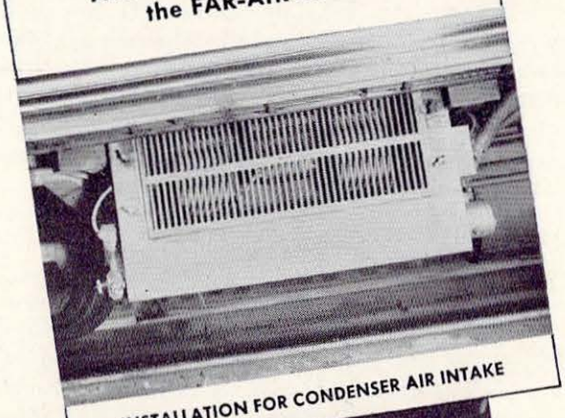
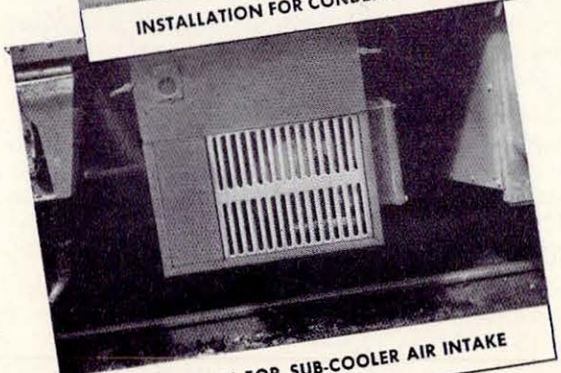


INSTALLATION FOR CONDENSER AIR INTAKE



INSTALLATION FOR SUB-COOLER AIR INTAKE

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RAILWAY AGE
EDITORIAL COMMENT

WHAT EUROPEANS THINK ABOUT OUR RAILROADS

The "Organization for European Economic Cooperation"—the European organization set up to help make effective this country's economic aid to Europe—sent a group of 82 European railwaymen to this country in the fall of 1950 to study our railway practices. Their report has been published by the O.E.E.C. in a 448-page book entitled "Railroads in the U.S.A."

There is a lot of information in this well-illustrated book which would enlighten American railroaders, as well as Europeans. It covers U. S. railway practices in all departments. While much of the descriptive matter deals with the well known, some of it is revelatory. The fact is that there exists no thoroughgoing text, prepared for American readers, which sets forth U. S. railroad practice in adequate detail—and no such text can be produced as a self-supporting publishing venture. The reason is that no author competent to produce such a book could afford to do so for the compensation his royalties would bring him. Such books can be produced only when the authors can afford to work for nothing, or next to nothing, or when their labors are subsidized.

The Yardstick of Contrast

Failing a good descriptive text on American railroading for Americans, then, we can take this book, written by Europeans primarily for their own benefit, as the next best thing. From one point of view, the fact that this report was prepared by Europeans adds to its value —because attention is constantly directed to differences between European and U. S. practice. This contrast provides something of a yardstick, indicating where our practices afford advantages, and vice versa.

The Europeans admire many more aspects of our railroading than they question—but the profitable (for us) part of their report should be the things they observed which excited their wonder, rather than their admiration. It was in the area of freight rates and service where most of the questions arose. For example (we quote):

"In comparison with European tariffs, the American tariffs, in spite of their huge volume, are not so detailed in their grading. Thus l.c.l. rates take no account of the variations in the weights of consignments, so that a package of 50 kilos pays the same rate per lb. as a consignment of 5 tons; similarly, only one tonnage is taken to represent a full carload (although there is a tendency now to impose higher weight limits than those laid down in the classification on certain commodity rates). Reductions for multiple cars or for complete trains, subscriber rates or special rates for customers of long standing, are, however, quite unknown in the United States: while the I.C.C. recognizes the theoretical advantage of 'incentive rates' for increasing the size of loads and the volume of traffic, the view most commonly held is that they would represent discrimination between larger and smaller users, and it is for this reason that they are completely banned. Hence, the load per car is rather lower than in Europe, except, of course, for heavy goods in bulk, in the case of which loading to capacity is the rule. . . .

"Whereas the European railways try to group their rates in one single volume easy to handle based on a fairly obvious guiding principle, there are no less than 12,000 volumes for the American railway tariffs, and even the expert cannot claim to know more than a very small part of them. . . .

"The sliding scale of American tariffs decreases much more steeply than the corresponding costs: the railways' gross profit is therefore chiefly derived from short and medium hauls, which is the field in which they are most vulnerable to road competition. . . .

"Whenever the railways are induced by other considerations, such as competition from other forms of transport, to alter one particular rate, they are absolutely compelled to extend the new rate to transport of the same kind, in order to maintain the same general ratio as before. One result is a certain lack of flexibility. . . .

"Generally speaking, the importance attached to equality of treatment between the various users, which is the fundamental doctrine of the I.C.C., makes it difficult to introduce

any systematic alteration in the interrelated system and it would seem that underneath its appearance of apparently limitless flexibility, the American rate system at the same time offers a certain resistance to partial readjustments. . . .

"Although it is not easy to express a definite opinion as to the quality of the services provided by the American railways, the group were able to verify on the spot that the speed with which the goods were handled was very much lower than European 'express' services, and even on the whole rather slower than the average speed for 'slow' traffic. As for breakages, the percentage of compensation in relation to receipts (2.5 per cent) is higher than in Europe. This higher figure can be attributed to the fact that the American railways as commercial enterprises show usually a prompt readiness to meet their customers' claims. This percentage, however, may also be higher than in Europe as a consequence of a certain roughness in shunting trains accentuated by automatic coupling."

The accuracy of the Europeans' observation may be open to question in some places. For example, in their conclusion that competing forms of transportation are subject to rigorous regulation similar to that of the railways, the reporters do not appear to have given adequate attention to the contract and private carriers, nor to the fact that regulation of other types of transportation is much less onerous than for the railways (e.g., as regards the fourth section). They appear to believe that it is a specific provision of the Sherman Act—rather than a whim of the I.C.C.—which prevents the railroads from engaging in highway transportation on a much greater scale than is now permitted.

Admiration—For Technology

On the side of technology, the Europeans found countless things to admire and few to question. They admire our accounting and statistics, our safety education, the friendly relations between employees and officers. Standardization of equipment has facilitated interchange and reduced construction costs but it has also, these observers assert, restricted the introduction of improvements. They are not especially enthusiastic about our buffer-coupler for freight equipment and insist, if a central buffer-coupler is to be adopted in Europe, the device should be wholly automatic, "coupling also the brake hoses and keeping the cars close together without slack."

They admire our equipment industry, alike for its economical mass production practices, for its zeal in research, and for the centralized exhibitions provided at meetings of railway men.

They remind us that our policy of keeping our railways from consolidating has resulted in "a large number of independent companies, mostly small and without great scientific resources." They point out that, as a consequence, only a couple of our railroads had as many as 4,000 locomotives—a number large enough to encourage considerable independent research. By comparison, the British railway system has 20,000 locomotives, that of France 13,000 and of West Germany 10,000.

Continuing exchange of information between the European and American railways, our visitors believe, would be beneficial. That's probably right, and not beneficial solely to the Europeans.

"SAFETY FIRST" ON THE RAILWAYS

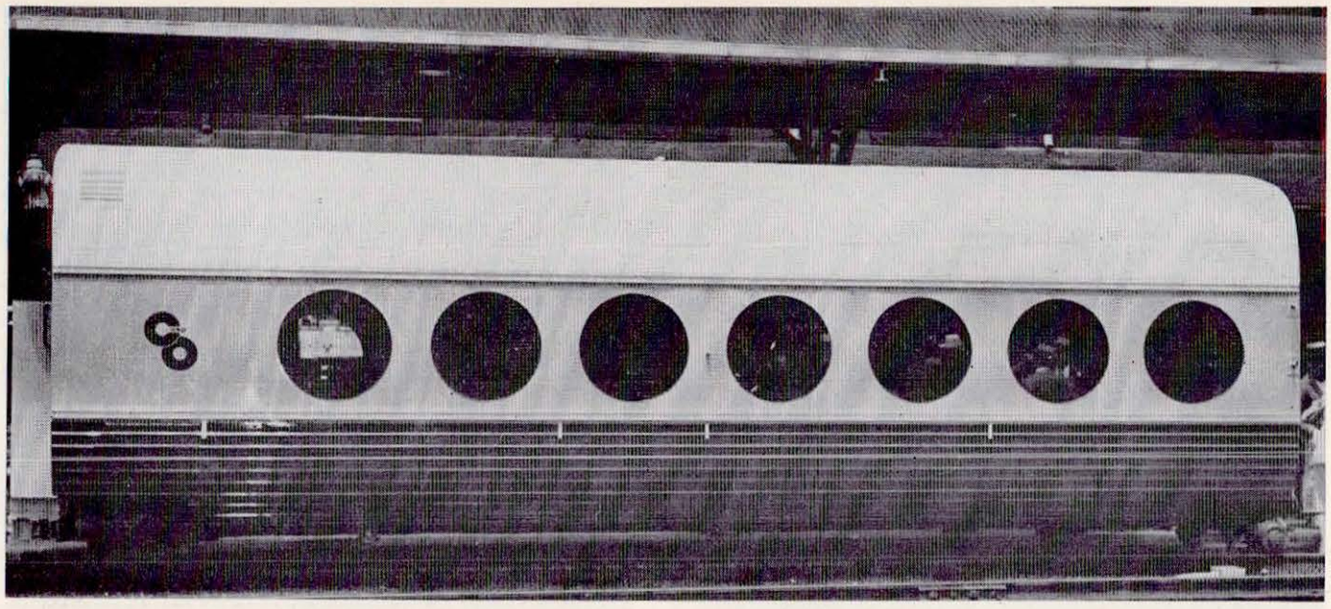
Probably the greatest single achievement of the management and employees of American railways has been the reduction of accidents. Both management and employees deserve the credit because their cooperation was essential to the accomplishment. The E. H. Harriman memorial awards to railways for the best safety records in 1951 were made at a dinner given by the American Museum of Safety in New York on September 17. This is the thirty-third year for which these annual awards have been made. While they are made to railways, every student of railway safety knows that the management of every railway that receives one of the awards owes the winning of it very largely to the fact that its employees as a whole have really practiced "safety first."

The "safety first" movement on the railways was started at a meeting of divisional officers and employees of the Chicago & North Western at Baraboo, Wis., in August 1910. The meeting was addressed by R. C. Richards, general claim agent, who, after detailing the principal causes of railway accidents, brought about the creation of a divisional "safety first" committee composed of both officers and employees. The movement thus started for cooperation by officers and employees to increase safety spread so rapidly over the railways and soon became so successful that Mr. Richards became known as the "father of railway safety."

Within the four decades from 1910 to 1950 the total number of persons killed annually on the railways was reduced almost two-thirds, or from 9,682 to 3,486, and the number injured was reduced almost three-fourths, or from 119,507 to 33,267. This was a great achievement, but there was nothing miraculous about it. Like most great achievements, it was the natural and inevitable result of thorough study, careful planning and prolonged arduous effort.

Anybody who studies the safety record of the railways will soon learn that the achievement of reducing fatalities two-thirds and injuries three-fourths between 1910 and 1950 was accomplished in spite of numerous set-backs. Many influences determine the yearly accident record of each railway as well as of the railways as a whole. Among the most important of these are fluctuations in traffic.

The great increase of safety on the railways since the "safety first" movement was started is the cumulative effect of all the expenditure and effort that have since been made to prevent accidents. How gradually, but steadily, the decline in accidents has been accomplished is indicated by the following statistics of total fatalities at ten-year intervals since the beginning of the "safety first" movement: 1910, 9,682; 1920, 6,958; 1930, 5,665; 1940, 4,740; 1950, 3,486. There was a reduction of total fatalities in 1951 and a further reduction in the first half of 1952, compared with the first half of 1951. There is every reason to believe that the improvement will continue, as long as the reasons for the improvement already attained continue operative.



When disconnected from the adapter car, the forward end of the "Train X" unit is supported by dolly wheels (right).

What About the C&O "Train X"?

WHAT WILL "TRAIN X" SAVE?

The following is the C&O's computation of savings expected from use of "Train X" if substituted for a 14-car main-line conventional train pulled by a 4,000-hp. diesel:

	Train-mile saving, dollars	*Per cent total*
Maintenance of way	0.25	13.1*
Maintenance of equipment:		
Cars	0.30	15.8
Locomotive	0.278	14.6*
Amortization:		
Cars	0.658	34.6
Locomotive	0.125	6.6*
Transportation:		
Fuel for train service	0.082	4.3
Fuel for traction	0.172	9.0*
Lubricants	0.024	1.3*
Total	1.889	99.3

Weight reduction results in a saving of (per cent) . . . 45

Head-end service results in a saving of (per cent) 20

Weight, design and head-end features result in savings due to capital cost of (per cent) 35

*Savings due to weight reduction

What could be the prototype of the passenger train of the future was unveiled to the railroad industry June 11 when the C&O ran a 96-mile high-speed test on a "Train X" car with executives from a dozen or so U. S. and Canadian roads aboard.* Like the A.C.F. Talgo, this truly lightweight train, built by Pullman-Standard to C&O design, has been hailed with optimism by some railroaders but viewed with skepticism by others.

It is of course too early to decide which group is right—for two reasons. First, the test was made on a single car only, an engineering demonstration unit; full riding qualities and other characteristics are realized only in operation of a complete train. Second, operating experience alone can determine whether "Train X" can be run faster and cheaper than today's equpiment with comparable safety, and whether it is a practical all-around operating tool in the production of profitable transportation.

The big question to be answered at the present time, therefore, is whether the basic concept and design justify the expense of building a complete train of this equipment for road trials. To help the reader to form an opinion about this question, *Railway Age* has compiled answers to some of the questions that are likely to be raised:

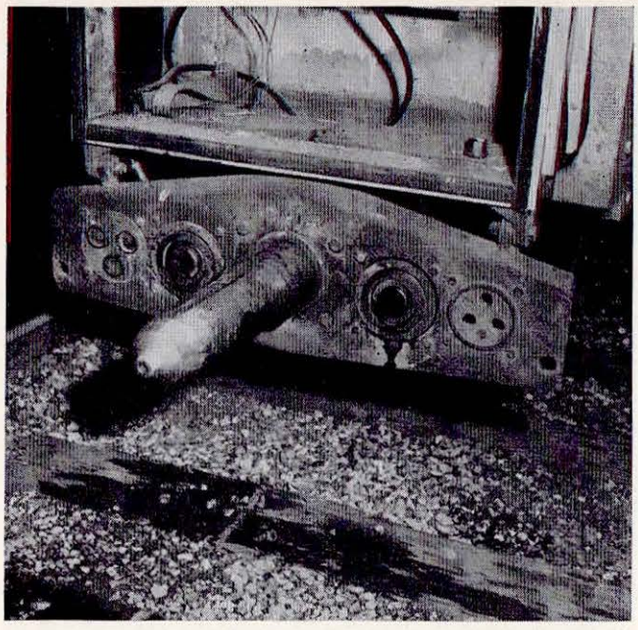
Q. Just what is "Train X"?

A. It is a passenger train design—completely different from today's standard equipment—comprising a series of short single-axle articulated units of extremely light weight and low center of gravity.

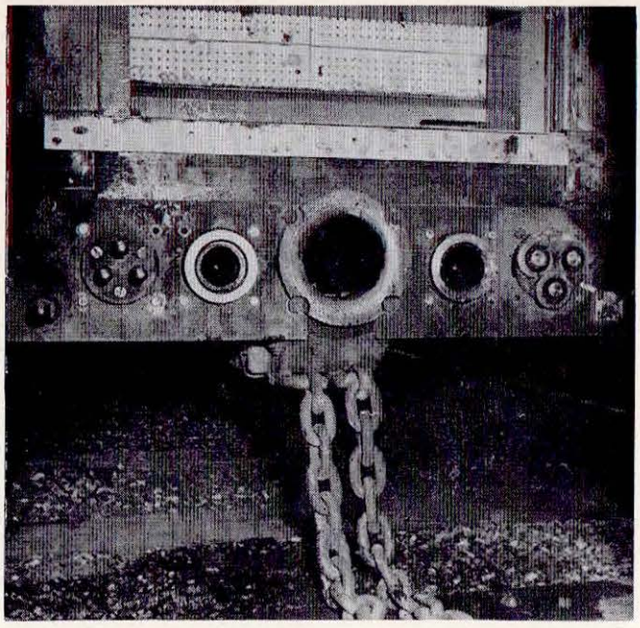
Q. Why all the interest in it?

A. It offers the possibility of substantial savings from three sources: (1) a two-thirds reduction in weight; (2) a simplification of mechanical design, and (3) elimination of most of the mechanical equipment now in-

*Reports of the test run appeared in the June 16 and June 23 *Railway Age*.



"Train X" units couple on impact in less time than conventional cars because the usual manual operations now required are eliminated.



When "Train X" units couple, service lines are connected, valves opened and couplings locked by lifting the dolly wheels which carry the front end of a separated unit.

stalled on each car by substitution of complete head-end service for heating, cooling and electric power.

Q. Just how substantial are the savings?

A. According to an economic study completed by the C&O last year, and based on 1949 costs, substitution of "Train X" for a main-line train of 14 conventional cars would save $1.90 per mile, or about half the out-of-pocket cost of operation, as shown in the table. For a train of seven to nine cars, the saving would be about 90 cents per mile, or 40 per cent of the out-of-pocket costs.

Q. How were these savings computed?

A. In various ways: maintenance of way by lower gross-ton-mile usage of tracks, ballast, ties; equipment in several ways, e.g., in journal bearings because there are three-quarters as many journals, in brake shoes because weight is one-third, etc.

Q. How would "Train X" reduce crew and terminal costs?

A. It would not, and no savings from these sources nor superintendence were credited.

Q. What does the "Train X" car weigh per coach seat?

A. The experimental car with 28 seats weighs about 14,000 lb. light, or ¼ ton per coach seat, compared to a full ton per seat in present streamline day coaches. Approximately the same weight advantage over standard equipment applies to sleeping accommodations.

Q. In other words, a complete "Train X" with capacity comparable to a conventional train would weigh only a fourth as much per seat?

A. Actually it would be closer to a third as much because it would require entry cars not needed with standard equipment.

Q. Can such light equipment be safe?

A. Why not, at least insofar as weight is concerned? Automobiles weigh only a third of a ton per seat, buses less than a quarter of a ton per seat. Buses, with the lowest weight per seat, have a safety record comparable to the railroads with the highest weight per seat. Automobiles, which have a weight per seat between the two have the worst safety record.

Q. What about the structural strength?

A. "Train X" is designed to meet all Railway Mail Specifications and applicable A.A.R. requirements for safety, as far as the structure is concerned.

Q. What do you mean by "applicable" A.A.R. requirements?

A. Buffing strength (800,000 lb.) and roll-over strength.

"Train X" Dimensions

Q. What are the principal dimensions of a "Train X" car?

A. Compared to a conventional car, it is a little over a third the length, 4 in. wider, 3 ft. lower and 2½ ft. nearer the rails. Length over coupling centers is 31 ft. at 14 in. height; body length 29 ft. 10 in. with 26 ft. 3 in. of revenue space; width overall 10 ft. 4 in.; height of top of roof 10 ft. 5 in.; floor level above rail 21 in.; and clearance from rail to car bottom 10 in. Each unit has two 28-in. wheels pressed on an axle 4¼ in. by 8 in.

Q. Would operating flexibility be sacrificed?

A. No, except for non-interchangeability with present equipment.

Coupling Procedures

Q. How can two-wheel cars be coupled or uncoupled, or moved about when uncoupled?

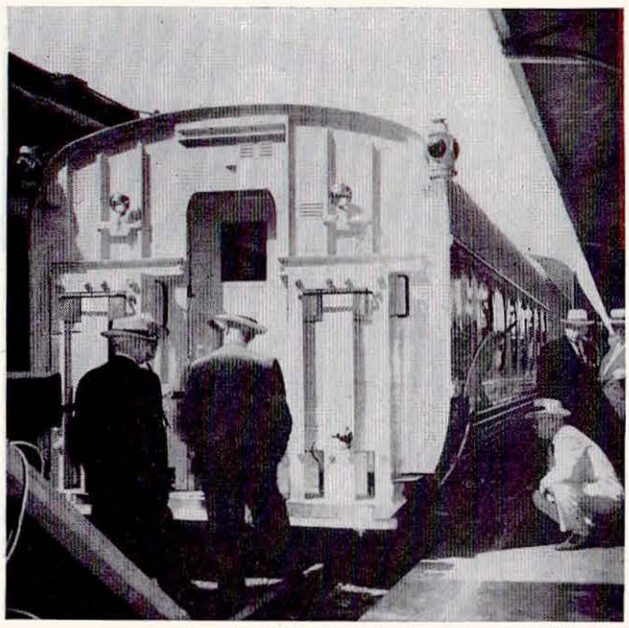
A. A pair of normally retracted dolly wheels near the front of each car are lowered prior to uncoupling.

Q. How long would it take to couple or uncouple cars?

A. A couple of minutes, or less than standard cars.

Q. How is this done?

A. The cars couple on impact. Service lines are connected, valves are opened and couplings are locked by lifting the dolly wheels which carry the front end of a separated car. Lowering the dolly wheels unlocks the coupling, disconnects service lines and closes the valves. Both operations may be controlled by electric push button. This method of coupling and uncoupling eliminates



The "Train X" unit is approximately one-third the length of a conventional car, the floor is 2½ ft. nearer to the rails and the roof is 3 ft. lower.

the manual operations now performed between and under conventional cars.

Q. How would the cars be protected from the weather if the train is broken up for repairs or switching?

A. Roll-type doors at each end of a car may be pulled down like a window shade.

Q. Are there any provisions made for switching "Train X" with conventional locomotives?

A. Yes; present plans call for incorporating a standard coupler and draft gear on the locomotive and on the rear car for switching.

Q. What type of accommodations would "Train X" include?

A. Different floor plans would provide, per unit, 28 or 32 coach seats, 8 roomettes, 4 bedrooms, or 32-seat dining space plus baggage, railway post office, kitchen-pantry, entry, lounge and observation units.

Q. How would spacing compare with present accommodations?

A. Roomettes and bedrooms would be 2 in. longer, and the extra four inches of width can be used for widening either the rooms or the aisles. Coach seat spacing would be 40 or 42 in., depending on whether 32 or 28 seats are installed per car. This would be adequate because the seats do not turn, permitting the passenger to put his feet under the seat ahead when stretching out.

Q. Could basic structures of the different cars be standardized?

A. Yes, including the window spacing if 32 seats are included in each coach unit.

Q. Where are the doors on such short cars?

A. Special entry cars are included in the train. The regular revenue cars have neither doors nor vestibules —both ends are "blind."

Q. What do the entry cars contain?

A. The entry car for the coaches carries baggage shelves, lounges and toilets; that for the sleeping cars has a porter's berth and a buffet and a lounge area.

Q. How do passengers get in and out of these odd-height cars?

A. The doors open inward at the floor level of the car and require but one outer step to reach standard station platforms; inside steps and an additional door opening in the roof could be included for use on high-level platforms.

Q. How many entry cars would be included?

A. About one for each five or six revenue cars.

Q. Would this not increase the hazard in the event of a wreck by making it difficult to extricate the passengers?

A. Proponents say the overall hazard would probably be little if any greater than with conventional equipment because of the wide-open passageways between the short units. Air-tight sealed diaphragms make a continuous single area of the train exterior.

Functional Design Features

Q. Simplification of mechanical design was mentioned as a factor contributing to the savings "Train X" could effect. Just how is the design simplified?

A. Trucks are eliminated; center sills are short with no equipment hung on the bottom; head-end power generated on the locomotive is substituted for individual car generators and air-conditioning units; the heating and air-conditioning systems are simpler; wiring and controls are reduced.

Q. What is the source of train-service power on the locomotive?

A. Roughly one-fourth of the diesel engine horsepower to drive a 230-volt, 3-phase, 60-cycle alternator, two 60-ton refrigerating machines and circulating air blowers.

Q. How is electric power distributed?

A. By through train line at 230 volts. Each car also carries a 12-volt automotive battery for emergency lights and control circuits, which is charged through a transformer and dry rectifier.

Q. How are wiring and controls reduced?

A. Less wiring is needed because circuits are simpler and it need not be so heavy for a given wattage because of the higher alternating voltage. A single circuit breaker on the locomotive cuts out the 230-volt line for disconnecting cars.

Q. Are there controls in individual cars?

A. Yes. A row of switches is mounted in one of the collision posts for turning lights on and off. Brake and thermostatic controls are in another collision post. The posts in each case are channel sections with the opening toward the center of the car; thus the switches and controls occupy space that would otherwise be wasted. A hinged door on one of the channel flanges closes off the space.

Q. With the preceding and other simplification features, does "Train X" have the de luxe electrical service (lighting, temperature control, etc.) found on today's name trains, or is an austerity system installed?

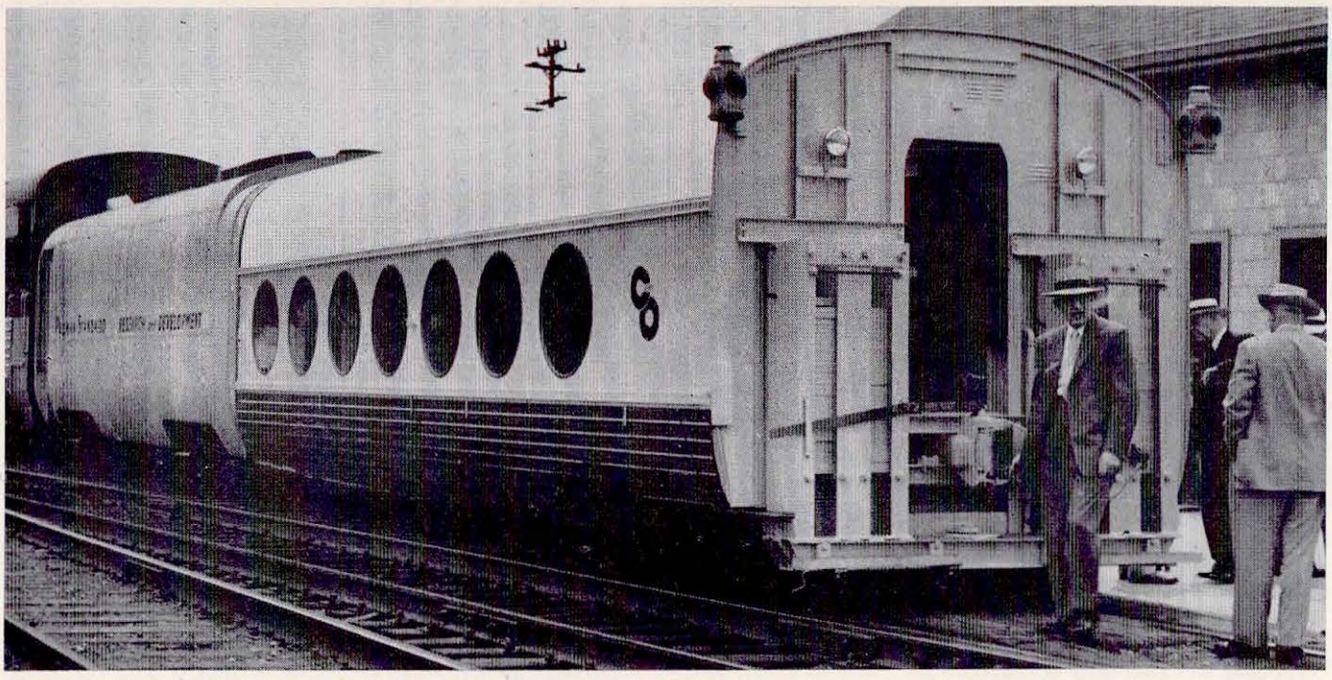
A. It is described as functionally equivalent in its comfort features to what might be found on today's better trains.

Q. What kind of heating and cooling systems are employed?

A. Heating and cooling is through a pumped water circuit from the locomotive through the train and return. Heat is added to the water from engine waste during cold weather, or extracted during warm weather by a refrigerating unit in the locomotive. Heating is supplemented by electric grids in the radiator circuit energized by the engine or by dynamic braking.

Q. How is temperature controlled?

A. The inside surfaces are held at substantially space



For a trial run to show the practicability of "Train X," an engineering demonstration unit was coupled to a conventional diesel through an adapter car.

The interior of the engineering model with exposed wiring and various instruments installed to determine stresses, ride characteristics, temperature conrol, etc.

temperature by circulating air within interwall, floor and ceiling ducts in a closed circuit with a heat exchanger to the water line.

Q. Is space temperature varied by controlling water temperature or by varying the volume of air supplied to the heat exchanger?

A. Both. The water temperature is controlled by the temperature of the outside air, the amount of water circulated, by controls within each car.

Q. How is fresh air admitted?

A. A roof inlet on each unit takes in 300 cu. ft. per min. of fresh air, which is tempered and discharged into the car. Each car has a fresh-air blower and a circulating blower. The ventilation air, filtered and unmixed with either the circuit air or the exhaust air, enters through the heat exchanger.

Q. How is humidity controlled?

A. By subcooling, as in conventional car installations. The air to the car interior is reheated by extracting heat from the air going through the side-wall ducts through an air-to-air heat exchanger.

Can "Train X" Run Faster?

Q. With so much trackage restricted to speeds of 60 or 80 m.p.h. by the I.C.C. because of the signaling systems, how can "Train X" provide better schedules?

A. It could operate steadily at maximum legal speed on curves, or at least closer to it than present equipment. This, rather than higher top speed, is expected to increase average stop-to-stop speeds.

Q. Is it because of its low height that "Train X" is said to be capable of operating at speeds 40 per cent above present limits?

A. Partially, perhaps, although the effect of a lower center of gravity on ability to take curves faster with comfort is somewhat controversial.

Q. Why then, is "Train X" said to be capable of higher speeds on curves?

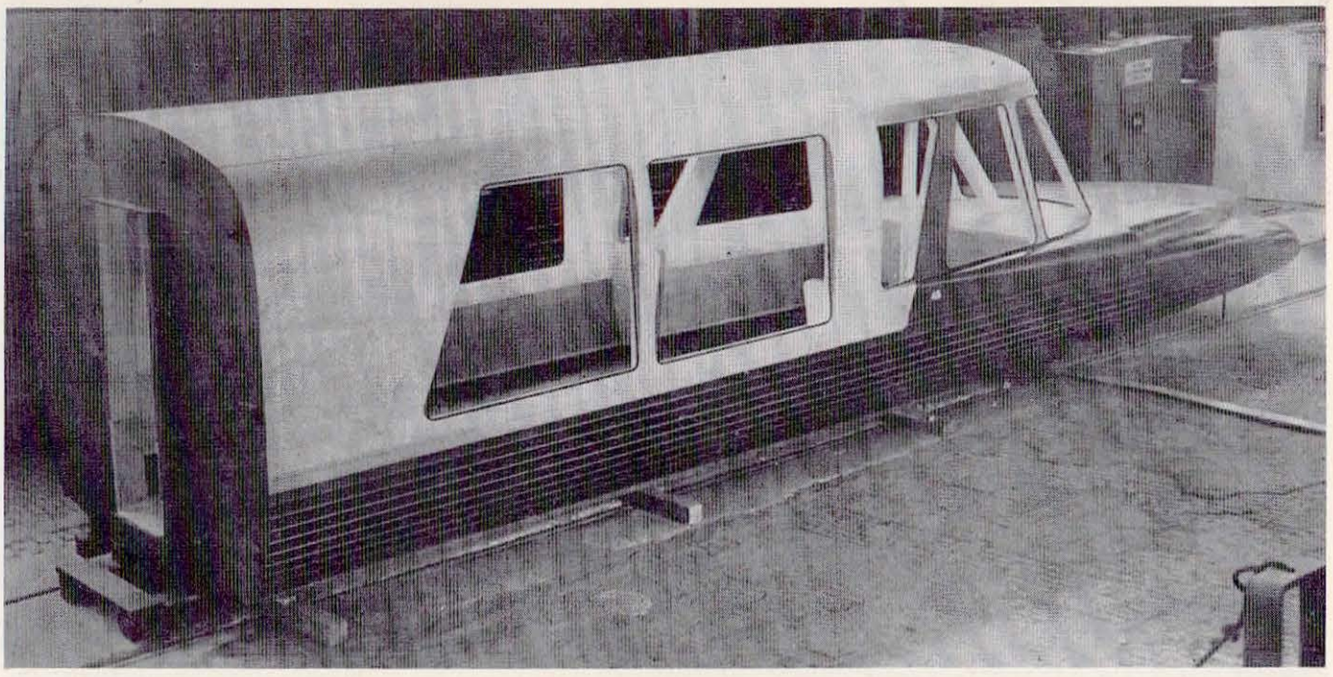
A. The spring suspension system is designed to create a pendulum effect so that the train will bank into curves like a bicyclist.

Q. How is this possible?

A. By supporting the body from above its center of gravity, thus causing the bottom to swing outward on curves, rather than the top.

Q. Why should this be more comfortable for the passenger?

A. It tilts him toward the center of the curve, or



Pullman-Standard mock-up of "Train X" observation unit.—The rear projection carries a counterweight equal to the load on the front of a unit.

counter to the centrifugal force, thus permitting higher comfortable speeds around curves, though not necessarily higher safe speeds.

Q. Has this ever been tried before?

A. Yes. On three conventional cars in service since 1942. The latter are reported to ride very well on both straight and curved track.

Q. If these pendulum cars ride so well, why have no more been built?

A. With conventional equipment about eight feet of revenue passenger space is lost per car with pendulum suspension. Such loss is largely avoided with the "Train X" design.

Q. Would wind resistance be reduced much?

A. Yes, for two reasons: (1) Shape and small, low profile of the train and (2) novel method of engine cooling, by which fresh air is taken in at the front of the locomotive like a jet airplane and discharged at the rear of the locomotive through gills at a speed close to that of the train but directed to eliminate aerodynamic drag. Also there is no under-car equipment, thus giving a smooth under surface.

Q. What kind of braking is used on "Train X"?

A. A pneumatic disc brake installed outboard of each wheel for easy access. Composition brake blocks on quick-change shoes are pressed against the disc by air pressure through an inner-tube-like bag. The control is electropneumatic.

Q. How would "Train X" couple to a locomotive?

A. On the demonstration run a special adapter car was used, which largely nullified the pendulum action of the test car to be expected on a full train. The contemplated complete train would have a specially designed locomotive with spring suspension that would not interfere with the pendulum action of the cars. The steering action into curves inherent in the trailing axle would be attained in the front axle.

Q. Has the locomotive been built yet?

A. No, only a dynamic model now running on test drums.

Q. What would such a locomotive be like?

A. It would have a suitable coupling arrangement, low center of gravity, head-end service equipment and be light in weight.

A preliminary design proposes a body of car cross section with a cab at the rear in a top canopy. It would be mounted on two axles on 31-ft. centers, each axle being loaded to about 60,000 lb. Present-day production traction motors would be used.

Q. What about the power plant?

A. The engine would develop a total of 1,600 hp. at the crankshaft, of which 1,200 hp. would be devoted to traction purposes for hauling a 40-unit train. The remaining 400 hp. would handle the auxiliary needs of the train.

"Train X" vs. Talgo

Q. In what specific ways does "Train X" differ from Talgo?

A. It differs in many technical details. Among the principal advantages claimed by the C&O for "Train X" over Talgo are:

(1) Meets strength requirements of U. S. railroads.

(2) Couples and uncouples faster.

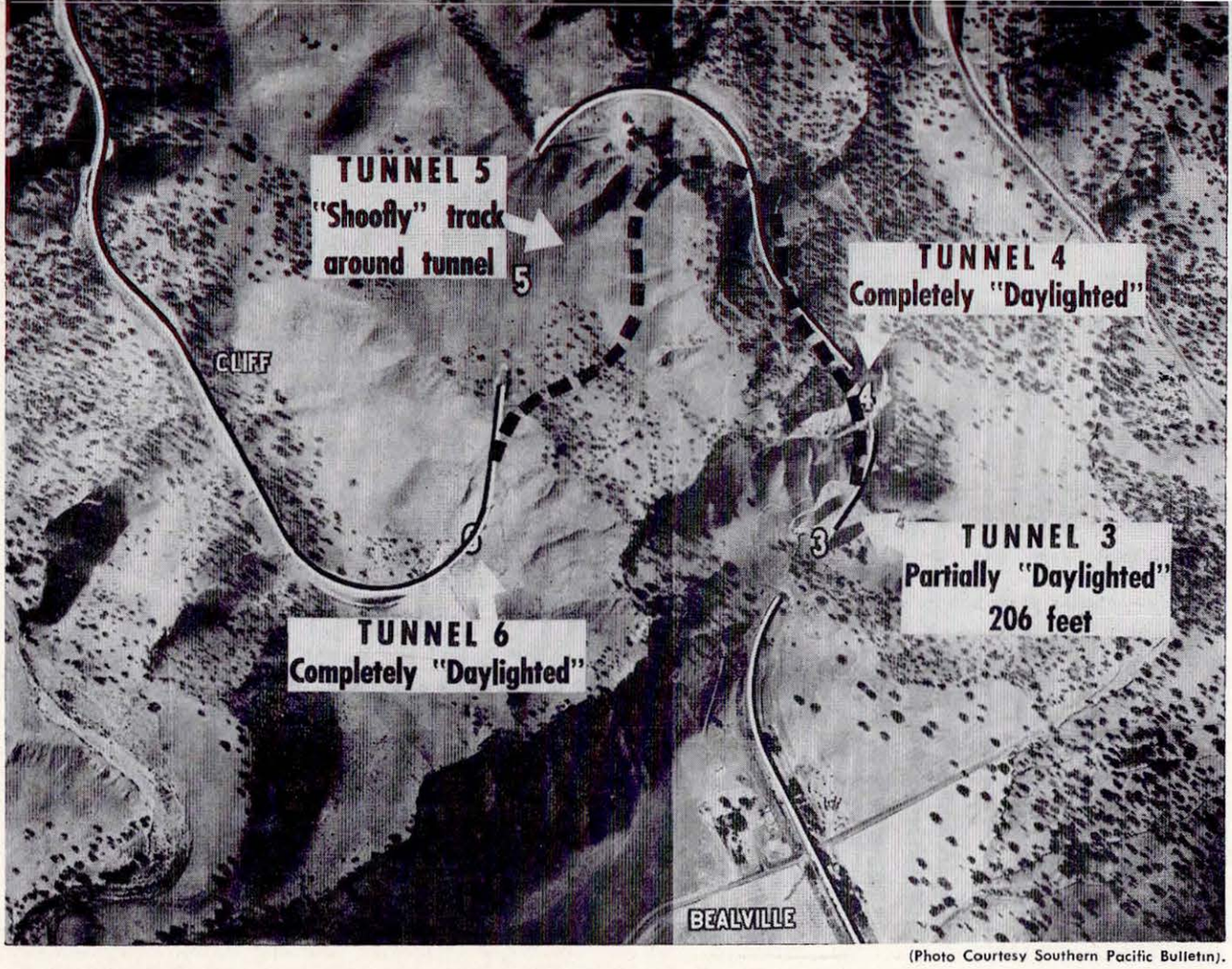
(3) The disc brakes on "Train X" are outside the wheels while Talgo has automobile-type expanding-drum brakes inside the wheels.

(4) Talgo has electric heating grids in ducts which are interconnected between the units. Each "Train X" unit has its own individual heating and cooling coil with no air duct interconnections between units.

(5) "Train X" has integral pendulum suspension mounting of car and locomotive bodies for higher speeds around curves. Talgo uses vertical springs plus a torque roll stabilizer and lateral truck bars.

(6) The "Train X" locomotive will match the cars' suspension system.

(7) "Train X" would have standard couplers front and rear for switching with present locomotives.



(Photo Courtesy Southern Pacific Bulletin).

This aerial view shows the topography and alinement in the earthquake area as well as the location and character of the emergency repair work required.

Cost—$2 Million . . .

How the SP Repaired Earthquake Damage

Partial destruction of four tunnels on line crossing the rugged Tehachapi range in California required large-scale daylighting operations and construction of long shoo-fly

A sizable area in southern California shows the signs of recent large-scale "plastic surgery," the operation having been performed at an estimated cost of $2,000,000 by railroad men, assisted by contractors, following a destructive earthquake on July 21. The operation is being performed in that part of the Tehachapi mountains traversed by the San Joaquin Valley route of the Southern Pacific, which is also used by the Santa Fe. It was necessary to undertake the face-lifting work as a consequence of serious damage incurred by the railroad's property, particularly in four of its tunnels.

The emergency reconstruction task was primarily a matter of daylighting all or portions of the damaged tunnels and of constructing a long shoo-fly around one of them. To move the vast amount of earth required by this work (1,250,000 cu. yd.) the railroad and contractors amassed more than 1,000 men and about 175 pieces of heavy earth-moving units which, with supplemental equipment, were estimated to have a total value of $3,500,000.

Working on an around-the-clock schedule this organization completed the emergency repair work in time to permit traffic to be resumed at the end of 25 days. While the engineering forces of the road were thus engaged in repairing the damage caused by the second most severe earthquake in recorded California history, the operating department was doing its part by solving the problems involved in diverting traffic over the Coast route, the SP's other main north-south line in California.

Many Curves, Heavy Grades

A description of the terrain and the line helps in understanding the problem the railroad faced in the wake

of the disaster. Construction of a railroad over the Tehachapi mountains in 1875-76 involved a climb of 2,734 ft. from the base of the mountains to top the 4,025-ft. Tehachapi pass about 16 air-miles away. This was done by laying 28 miles of track on a winding alinement extending through 18 tunnels and around the Tehachapi Loop where long trains gain 77 ft. in elevation by climbing over their own tails in ascending the mountain.

Longest of the tunnels was Number 5 which was completed about March 10, 1876. It was 1,169.6 ft. from portal to portal. The tunnels originally were wood lined. They were increased to standard clearances and given concrete linings by 1921. Of the original 18 tunnels, two were bypassed by line changes in 1921, and one was daylighted in 1943.

The ruling grade throughout the area is 2.2 per cent. The line is single track, with the exception of sidings, and is regulated by centralized traffic control. It is the major freight link between southern and northern California. SP's Coast route, the only other north-south rail line, is less heavily traveled by freight trains.

Earth Shudders for Three Days

That was the situation at 3:52:34 a.m., Pacific Standard Time, on July 21, when a wide area of southern California reeled and quivered under the initial shock of the earthquake. It struck with a magnitude of 7.5 on the seismograph scale, and the Tehachapi mountains shuddered for the next three days from aftershocks ranging from 3.8 to 5.6 on the scale. The San Francisco temblor of 1906, the strongest so far recorded in the state, reached an intensity of 8.25.

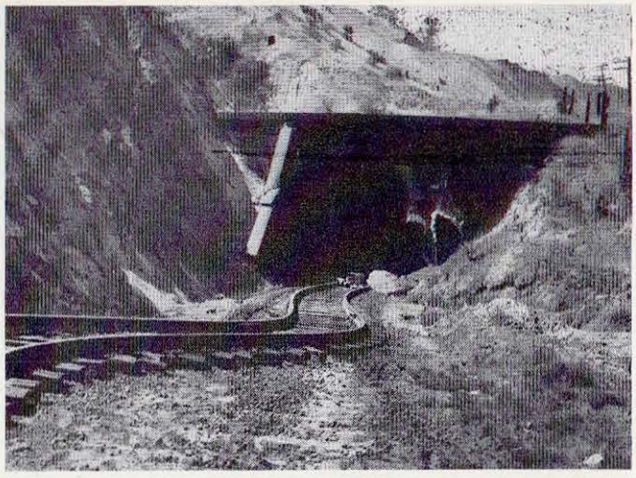
It was a "very nearly continuous motion of the earth's crust during the three-day period," according to seismologists at the California Institute of Technology. The quake centered in the Bear Mountain fault, defined in geological records as a "probable dead fault," which had been inactive possibly for millions of years. Total damage in Kern county, where the line runs, was estimated at $75 million. Fourteen persons died as a result of the quake.

In the major damage area on the railroad, the 11 miles between Caliente and Rowen, four tunnels were badly shattered, and linings of four more were cracked. Early inspection parties found three water tanks overturned, including the 350,000-gal. tank at Tehachapi station. Rails were out of alinement, and a water line running down the mountain as far as Bena was broken.

Inspection Reveals Serious Damage

Top officers of the SP lost no time in attacking the task of reconstruction. Five hours after the quake a special train left San Francisco for Bakersfield with the business cars of D. J. Russell, president, J. W. Corbett, vice-president in charge of operations, and E. E. Mayo, chief engineer. Accompanied by San Joaquin Division officers from Bakersfield, they started an inspection trip by foot over the damaged area shortly before dusk. Scrambling over wrenched rails and looking into the battered tunnels, the group found this picture of destruction:

Near Tunnel 1 above Caliente, 100 ft. of fill had dropped away from the rails, leaving them suspended 4 ft. in the air. At Tunnel 3, 700 ft. long, near Bealville, the east 200 ft. was badly damaged. The side walls of the tunnel, of heavily reinforced concrete 23 in. thick, were pushed in and the arch was broken in places. One



The cracked and broken condition of the east portal of Tunnel 3 shows why it was decided to daylight this end.

East of Tunnel 1 near Caliente the quake caused the earth to drop away from the rails. Note the crack along the toe of the ballast section.

Map of a portion of the Southern Pacific lines in California. The heaviest earthquake damage occurred between Caliente and Rowen. Through traffic was diverted over the Coast route while emergency repairs were made.

At upper left in this panoramic view, taken during the repair work, is seen the cut that replaces Tunnel 6. Center third of photo shows fleet of earth-moving equipment

Presidents D. J. Russell of the SP (left) and F. A. Gurley of the Santa Fe, inspecting repair work on July 31.

Board of strategy for the railroad in planning and prosecuting the repair work consisted of this group of Southern Pacific officers who spent most of their time at the scene.

rail was found twisted into an S-shape with one of the curves pushed under the wall of the tunnel. Yet neither the wall nor the rail was broken.

Tunnel 4, originally 300 ft. east of Tunnel 3, was now 8 ft. closer due to the earth's movement. As a result the connecting rails between the tunnels had been pushed into sharp curves. Throughout its 334.4 ft., Tunnel 4 was badly cracked. At one place, the rails were 4 ft. above the floor. Long jagged fissures several hundred yards long zigzagged along the earth's surface 160 to 190 ft. above the roofs of the tunnels.

The track between Tunnels 4 and 5 was covered with slides in several places. Where the line curved over a fill across Clear Creek canyon between the two tunnels, the earth from the ballast line outward had been shaken down about 3 ft. The west portal of Tunnel 5 was broken up and, for 600 ft. inside, the walls and arches were damaged to varying degrees. Beyond that point, and about 360 ft. apart, two plugs completely blocked the tunnel. The concrete lining between the plugs was damaged beyond repair. The east 200 ft. of the bore was only slightly damaged.

Tunnel No. 6, 300 ft. long, was partially blocked by a cave-in, and the track between it and Tunnel 5 was twisted up and down and sideways.

From Tehachapi down past the base of the mountain, the earth beside the tracks in cuts and fills had been shaken down from a few inches to several feet from the ballast line outward. Engineers theorized that the ground directly under the tracks had been compacted by the weight of trains over the decades, while that outside was less firm so that it "shook down" during the quake.

By midnight a swift-moving course of action had been projected for restoring the line to use. Briefly put, the plan contemplated the daylighting of the east end of

constructing roadbed for shoo-fly around Tunnel 5. Track at lower right extends alongside daylighted Tunnel 4. Telltale shows where line formerly curved into Tunnel 4.

Tunnel 3, the complete daylighting of Tunnels 4 and 6 and the repair and reconstruction of Tunnel 5 at the damaged points. To help implement its plan the road called on the services of the Morrison-Knudsen Company, contractor on many of the largest construction projects in the nation. Early the following morning, the contractor had bulldozers on the scene slicing away at the top of the mountain over Tunnel 3.

Men and machinery were mobilized from all over the West by the railroad and the contractor. The SP brought in six extra track gangs and six bridge and building gangs. In addition the Santa Fe provided an extra track gang and three bridge and building gangs.

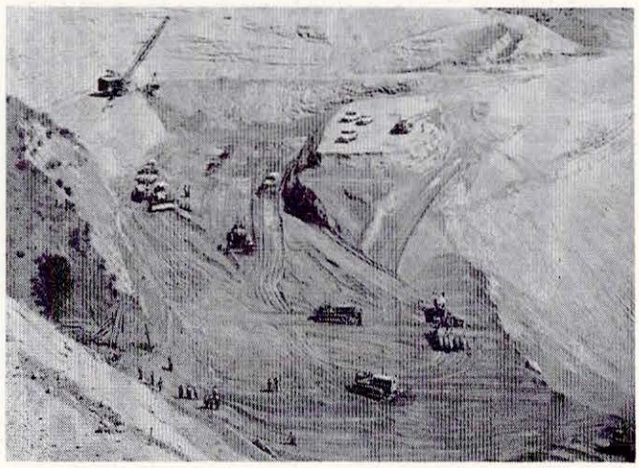
Morrison-Knudsen sent out an SOS to one of its top construction engineers and trouble-shooters, H. L. Leventon, who was on a fishing trip in northern California. Mr. Leventon hurried to the scene to become project manager. The construction firm brought men by airplane from as far as points in Idaho and Oregon. Eventually, it had 500 men on the job.

Bulldozers, scrapers and other construction equipment were subcontracted from eight construction firms in the general vicinity, and the Santa Fe ran a special train from Albuquerque, N. M., to speed Morrison-Knudsen equipment from that area to the scene. Within hours after the first shock, extra gangs, diner cars, and outfit cars began moving toward the emergency zone from the Western, Shasta, Sacramento, Los Angeles and Coast divisions of the SP.

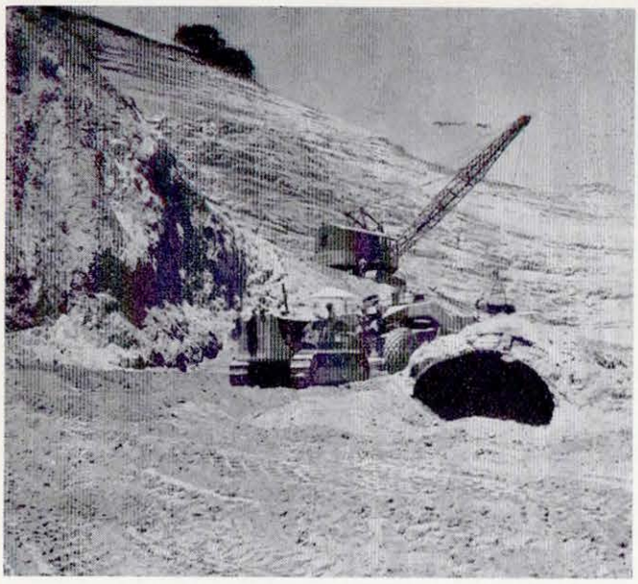
Materials Flow to Scene

By the morning of July 22, scores of cars of ballast, water, bridge timbers, signal equipment and other materials were rolling toward the quake-wracked area.

Earth-moving equipment swarms over mountain side in constructing shoo-fly around Tunnel 5.



The equipment worked two 10½-hour shifts daily. Machines shown on the job in this view include a number of Caterpillar D8 tractors.



Crown of one of the damaged tunnels is exposed as excavation work goes on around it.

There was time for the human side of railroading, too. An emergency supply of water in tank cars was made available to the community of Tehachapi where the business district had been demolished and 11 persons killed. The SP station in the town became an emergency post office.

More messages poured out from the area Wednesday, the 23rd—"39 cars ballast at Tehachapi"—"28 cars ballast out of Sun Valley to Mojave left 3:15 a.m."—"20 cars ballast with spreader leaving Bakersfield 7 a.m."—"54 cars ballast in Bakersfield yard—7 en route."

Within 36 hr. after the quake, bulldozers had carved out more than five miles of winding but serviceable access roads over the rugged terrain around the area, thus speeding the flow of men and materials.

The use of radio played an important part in expediting the project. An emergency radio communications center was set up in a caboose in Bealville. Men out on the job communicated with it by use of 15 "walkie-talkie" sets. Instructions and messages were relayed to and from Bakersfield, the nerve center, through the caboose.

The tremendous concentration of men, equipment and materials immediately started to work on the plan of repair. Crews were split into two 10½-hr. shifts. The other 3 hr. of the day were devoted to the maintenance and repair of equipment. Twelve to fifteen 1,500-1,800-watt portable light plants allowed nighttime operation at the same pace set during daylight hours. Except for the battle against time, no major construction problems were found.

In daylighting the east end of Tunnel 3 its concrete shell was pounded into rubble with three-ton steel balls swung from cranes. A 206-ft. length of this tunnel was daylighted, leaving a 494-ft. tunnel. The new cut at the east end of the tunnel is 147 ft. deep. The daylighting of Tunnel 4 created a cut 181 ft. deep. The old walls of the bore were left in place to serve as retaining walls. The cut that replaces Tunnel 6 has a depth of 140 ft.

Build Shoo-Fly at Tunnel 5

By August 2, it had become apparent that the damage to Tunnel 5 exceeded the original appraisal. Hence, after working on the bore for 10 days, it was decided to build a shoo-fly around the tunnel so that traffic could be restored while work on the tunnel continued.

Behind this decision is a story that emphasizes the importance of photography as an aid to engineers in assessing damage and planning emergency repairs. The caved-in portions of Tunnel 5, located 598-ft. from the west entrance and 211 ft. from the other, created a problem in determining the condition of the tunnel between the two blocked areas. A "coyote hole" about 36 in. wide was forced through an upper corner of one of the earth blocks.

In an effort to assess the damage two of the railroad's engineers, each armed with a hand flashlight, crawled through the narrow 30-ft.-long opening. Since the flashlights provided only dim illumination, the two engineers returned with varied opinions of what could be seen.

One of the three photographers the SP had at the scene volunteered to squirm through the opening. He shot two pictures which were quickly developed and printed. The photo flash bulbs lighted the dark tunnel for a depth of more than 100 ft. The pictures showed concrete walls bulged inward and the tunnel arch badly crushed. After reviewing the pictures late that night in a business car at Bealville, railroad officers made the decision to build a 4,358-ft. shoo-fly around Tunnel 5. Lacking drafting tools at that late hour on the scene, one of them improvised by using a saucer to shape a 15-deg. curve leading into the proposed temporary route.

Constructing the Shoo-Fly

To construct the shoo-fly, Morrison-Knudsen in 150 hr. hauled 250,000 cu. yd. of earth from two giant cuts to make a new fill on the curve between Tunnels 4 and 5. Part of the earth came from a cut about 100 ft. into the mountain alongside Tunnel 4 to make room for the curve leading into the shoo-fly. The remainder came from the shoo-fly cut in the same mountain in which Tunnel 5 was located.

Before the fill was begun, 480 ft. of 72-in. diameter corrugated steel drainage pipe was laid. A joint where the pipe made a change in grade was secured with a shotcreted collar and intermediate joints were connected by standard corrugated collars. The fill material was laid in 6-in. lifts. With up to 50 diesel tractors and scrapers working the major fill area simultaneously, the compaction went ahead steadily, with water sprayed on continually. This grading job was the most spectacular operation of the entire project.

The finished fill is 460 ft. across at the bottom and 50 ft. at the top, and is 132 ft. high. The shoo-fly is 690 ft. shorter than the original line through Tunnel 5. Grade on the shoo-fly is 2.37 per cent. The 15-deg. curve leads into it over the fill.

Three to Four Months More Work

The repairs to Tunnel 5 will require three to four months to complete. In breaking through the tunnel's cave-ins, a top drift was first bored, and the sagging arch supported with 4-in. spiling. After that, the drift was winged out and steel segment wallplates set, with steel posts under them. A shotcrete lining was constructed inside the plates to provide a temporary finish. The work is currently progressing.

About 1.75 miles of new track had to be laid. Long tangents of track had to be resurfaced and lined because of small irregularities. Because of countless after-quakes in the days following the first shock, the water line from Tehachapi Springs to Caliente, broken

in hundreds of places, continued to pull apart for a couple of weeks.

Rocks, some of them the size of automobiles, had to be removed from the tracks. The only dynamite needed during the entire project was used to break these into pieces that could be handled. Before traffic was resumed, all cuts were scaled by bridge and building gangs. Berms 20 ft. wide were cut in the slopes of the daylighted sections. The mountain-moving was carried out without special difficulties. Since the disintegrated granite with low mica content, prevalent throughout the area, was easily worked by the grading equipment, no blasting was necessary.

Traffic Diverted to Coast Route

While repair crews sweated and strained to repair the damage quickly, operating personnel performed the momentous task of diverting north-south freight traffic over the railroad's Coast route. This operation was carried out under the supervision of W. D. Lamprecht, assistant general manager, who established headquarters on the scene at San Luis Obispo.

Westbound trains were routed over the Santa Paula branch between Montalvo and Burbank, via Saugus. Eastbounds ran over the regular Coast route through Chatsworth Junction. This set-up gave the railroad the equivalent of double track through that area. Trains were limited to 75 cars or the tonnage equivalent as far northward as Watsonville Junction.

Two new telegraph offices went into operation and schedules were lengthened, sometimes to 24 hr., at others. Emergency diesel facilities were pressed into service at San Luis Obispo.

Diesels from the blocked San Joaquin Valley route augmented the motive power pool on the Coast route. Also, the Santa Fe loaned seven diesel locomotives, and steam locomotives from several other divisions were added to the power supply.

Meanwhile, 145 brakemen and firemen from other divisions moved over to other duties on the Coast route at the peak. These included 29 from the Santa Fe. The remainder were from the SP's Rio Grande, Tucson and San Joaquin divisions.

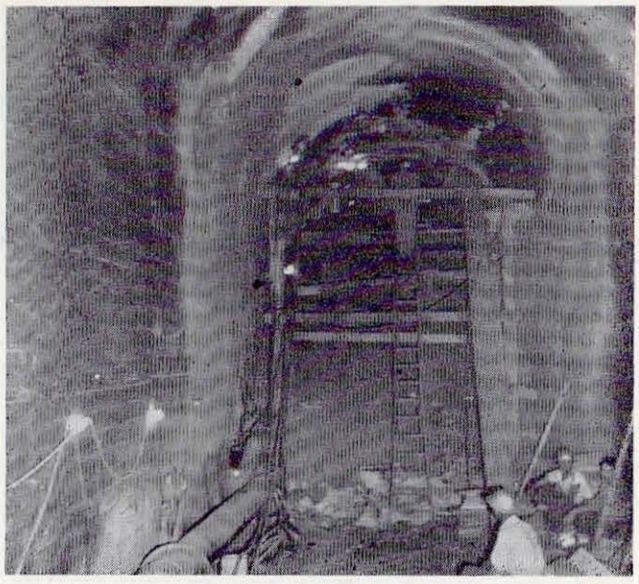
Mr. Lamprecht estimated that had steam power been used exclusively, there would have been a grave possibility of a water shortage. But the postwar dieselization program that has been carried out on the SP provided insurance against that threat.

AC's and 2-10-2's were used as helpers over the hill between San Luis Obispo and Santa Margarita where the ruling grade is 2.2 per cent. At other points on the Coast route the ruling grade is 1.0 per cent.

Figures Tell the Story

A comparison of traffic figures in the week before the emergency and during it demonstrate effectively the efficiency of the Coast route operation. Between July 13 and 19, a total of 55 trains passed over the Coast route, making a total of 4,557 cars. The daily peak was 9 trains and 731 cars. During that same period the SP sent 86 trains and 5,060 cars over the Tehachapi route and the Santa Fe 65 trains and 4,572 cars, or a total of 151 trains and 10,522 cars.

During the height of the emergency, the Coast route handled a daily average of 24 trains compared to 8 before, and 1,702 cars compared to 651. The peak was reached on August 10 when 1,886 cars traveled the Coast route. These figures do not include 8 scheduled



Attacking the plug at the east end of Tunnel 5. This view shows the first temporary set and the top heading.

passenger trains, an extra passenger train, and local freight service.

In view of the limited capacity of freight terminals and sidings at both Santa Barbara and San Luis Obispo, train movementss in and out of the Coast route were carefully regulated to avoid congestion. Trains leaving Montalvo for Santa Barbara were spaced on an average of two hours apart.

Passenger Service Maintained

The emergency did not halt passenger service on the San Joaquin route. Only one train, the "West Coast," No. 59 and 60, a night passenger train between Sacramento and Los Angeles, was annulled. The San Joaquin-Sacramento "Daylights," the overnight "Owls," and passenger trains No. 55 and 56, ran on regular schedules north of Bakersfield.

Passengers, baggage, mail and express were shuttled between Bakersfield and Los Angeles by bus and truck. The regular schedule of departures and arrivals at the Los Angeles Union Passenger Terminal was maintained.

On August 15, the twenty-sixth day after the earthquake struck, a Southern Pacific freight consisting of 100 empties wound slowly down the mountains out of Tehachapi. Two days later, the Los Angeles-bound "San Joaquin Daylight" snaked up the mountain, the first passenger train to make the trip since early on July 21.

On August 18, in a series of large newspaper advertisements published throughout California, a message from President Russell of the SP announced that "normal freight and passenger train service has been restored on our San Joaquin Valley line." Mr. Russell thanked the men and women of the Southern Pacific for their loyalty and outstanding performance; the Santa Fe and its work gangs who worked shoulder to shoulder with SP people; the Morrison-Knudsen Company, which "put on the job the greatest emergency concentration of earth-moving equipment ever assembled in the United States"; and the travelers and shippers who "showed patience and forbearance in accepting uncomplainingly our less convenient temporary service."

A number of railroads recently have created special task forces whose sole function is to improve the handling of cars through yards and terminals.

Managements and regulatory bodies demand a lot of statistics. The proposed Universal Station and Junction Code will cut time and expense in compiling them.

Systems and Procedures Group Studies Yards and Terminals

Advantages of Universal Station and Junction Code and NYC plan for draft settlement of interroad bills also described

With some 80-odd people, including members and guests, in attendance, the first real business session of the Railway Systems and Procedures Association featured two talks on work simplification and a panel discussion on the yard and terminal problem of the railroads. In addition, there were talks on the New York Central's plan for the draft settlement of interroad bills; and the advantages of the proposed Universal Station and Junction Code. The meeting was held in Chicago on September 10 and 11.

The first speaker on work simplification was Ben W. Graham, of the Standard Register Company. Mr. Graham, one of the acknowledged authorities on the subject of work simplification, said that attempts along those lines had, in most cases, neglected to take into account the human feelings of people down the line when trying to improve procedures, paperwork or other. Everyone, he said, likes to feel that his work is appreciated and that he is accomplishing something. Therefore, in selling any work simplification program, the person to be sold must be shown that there is some advantage for him or he, most likely, will resist the changes that such a program will call for. Resistance to change is an effect, not a cause—the effect of not being given a chance really to participate. We've got to "consult with 'em," said Mr. Graham.

Speaking specifically on the subject of paperwork simplification, Mr. Graham stated that the foundation of success in any such endeavor is mutual understanding and confidence of the people involved in (there is no one involved "by," in Mr. Graham's theory) making the changes. Furthermore, he said, paperwork usually cannot be improved on a single department basis.

The approach to simplification, Mr. Graham went on, involves five steps: (1) recognition that the situation needs attention, establishing the objectives to be accomplished, and isolation of the causes of the difficulty; (2) getting all the facts and *organizing them in relation to each other;* (3) analyzing and evaluating facts; (4) creating an answer to the problem; and (5) getting approval by the necessary authorities and putting the operation to work.

In work simplification, especially paperwork, Mr. Graham went on, people need not be cut off in order to make the program successful. Generally, he said, there is plenty of reason for putting people cut out from one job at work on a new one producing some sort of figures which are at present unobtainable but which could be most useful. In the work simplification program in his own company, Mr. Graham continued, people were assured that as a result of changes no one would lose his job. People affected by changes are moved to other necessary jobs until the normal process of attrition through retirements, deaths or separation for other causes takes care of any "excess" help. Nevertheless, he said, the program has made money for the company.

Mr. Graham sounded one word of warning regarding work simplification programs. In altogether too many

instances, he said, they have tended to break down the line organization rather than to build it up. In his own company's program, he said, the so-called "experts" in simplification techniques are called on by the line organizations when the line groups feel they need help.

E. E. Slack, supervisor of work simplification in the mechanical department of the Chesapeake & Ohio was called on by Mr. Graham to describe a railroad work simplification program. To date, Mr. Slack said, only supervisory employees had been given the work simplification course. It is expected that boilermakers, car repair men and others also will be introduced to the idea at a later date.

It is still too early, he said, to make any real evaluation of the program in terms of economies, if, indeed, that were possible at all. However, he said, it has aroused widespread interest among the men working in the course and has produced inquiries from others as to when they may be able to get into the show. Also, Mr. Slack went on, suggestions—and good ones—now are being sold by the men to each other and to their foremen, with everyone being much more receptive to suggestions than heretofore.

Yard and Terminal Operation

On the second day of the program, one of the features was a panel discussion on the yard and terminal problem. Participants were: B. R. Gould, general manager, Union; A. H. Gass, chairman, Car Service Division, Association of American Railroads; J. L. Barngrove, Jr., superintendent of freight transportation, New York, New Haven & Hartford; T. J. O'Connell, chief of yard and terminal operations, Baltimore & Ohio; and J. R. Cantwell, terminal superintendent, Chicago & North Western. Mr. Gould, as moderator, noted that growth of our cities, more powerful locomotives and many other factors are tending to make the terminal problem a very real one. Much money is being lost through poor handling in terminals and through loss of freight car days because cars spend altogether too much time in terminals.

Mr. Gass estimated, roughly, that each car is "turned" in revenue service in 434 hours. "Had it been possible so to speed up car handling as to save one hour out of each 24 for each freight car the statistical conclusion is that the same level of traffic could have been handled with some 84,000 less cars in ownership, or, at an average cost of $5,000 per car, a reduction of $420 million investment in cars." Mr. Gass said it is difficult to say just how much time a freight car spends in terminals. However, the best figure available, admittedly not entirely representative of the true condition, is one derived from statistics of the Interstate Commerce Commission, which indicate that the average car spent (in 1951) only 2.58 hours in road trains. "This would seem to mean that we had somewhat over 21 hours of the average freight car day during which to secure the saving of one hour in yards and terminals, including time in the hands of shippers and receivers as well as railroads."

Mr. Gass went on to say that the great improvement in net ton-miles per serviceable freight car-day during the past 18 years (166 per cent) did not support any assertion that on the whole the railroads are doing a poor job of car handling. However: "There is no doubt that terminals could well stand a lot of rearrangement; a lot of new trackage; . . . new car retarders; . . . and a thousand and one other improvements." But, Mr. Gass said, how far and how fast the railroads can go in making these improvements depends to a great extent on the earnings that they are permitted to make and retain.

The C.S.D. chairman also commented favorably on the recent trend toward "high level and specialized supervision of yard and terminal operations." In conclusion, Mr. Gass put in a "plug" for the automatic short-routing scheme on empty box cars which is now under consideration by the carriers.

Mr. O'Connell, after giving a general description of some of the factors which must be taken into account in planning yard and terminal operations, went on to tell his audience some of the things the B&O has done in recent years to improve yard operations, with special emphasis on pre-blocking of trains in an effort to make freights "main-trackers" over the maximum possible distances. He cited the fact, too, that 40 per cent of a yard clerk's time is taken up in answering inquiries about cars which the inquirer is trying to locate. In 75 per cent of the cases, he said, the inquiries were found to concern cars which had left the particular yard two days prior to the date of inquiry.

In answer to a question from the audience, Mr. O'Connell said systems and procedures people could help the operating departments of the railroads by doing a little combining of some of the many forms that it is necessary for yard forces to fill out. Also, he said, if the accounting departments would discover that it is not necessary to take certain information from waybills so many times yard operations could be speeded and made more economical.

Mr. Barngrove stated that terminals are one of the New Haven's greatest problems. He described the coordination in the flow of cars and paperwork that is necessary to get cars through terminals expeditiously. Also, Mr. Barngrove said, the advance consist as used by the New Haven is enabling that road to do a better job of policing yard performance than has ever been possible before. This tends to alleviate some difficulties formerly encountered, he said.

Importance of Good Communications

Mr. Cantwell told something of what good communications mean to a yard, especially to one which serves a heavily industrialized area. Now, with use of loudspeaker systems, radio, pneumatic tubes, etc., he said, it is possible to assure that 85 to 90 per cent of all cars received in a terminal get out the same day. Still, he concluded, more terminals need these types of equipment; as it becomes available the overall performance of the railroads will improve and yard and terminal costs will decrease.

Also on the second day of the two-day session, H. L. Porter, assistant comptroller of the NYC, told of some of the advantages of his line's plan for draft settlement of interroad bills. (This plan was described in *Railway Age*, July 1, 1950.)

Edmund Mech, auditor of freight receipts of the Illinois Central, said some of the advantages of the proposed Universal Station and Junction Code are:

1. A major step toward realization of a strictly numerical system of accounting;
2. Easier preparation of statistics on traffic by territories, etc.;
3. The streamlining of interline abstracts "through the discontinuance of . . . the names of roads, junctions and the from and to station be shown";
4. Further use of punched cards (exchanged by carriers) in checking interline settlements; and
5. Decreased expense of car accounting.

The next meeting of the R.S.&P.A. will be held at the Palmer House, Chicago, December 11 and 12.

Chairman—President Dumaine of the New Haven delivered the address of welcome to the meeting.

The new A.A.R. vice-president, A. R. Seder, talked about the treasury officer's responsibility to employees.

Division Chairman Jeffrey, treasurer of the Milwaukee, presided at the meeting.

Trucks Would Lose . . .

Railroads Could Take in $1.8 Billion More

Thomas of Keystone Custodian Funds outlined that prospect in address at annual meeting of A.A.R. Treasury Division; Badger of New England Mutual Life Insurance Company called for a reselling of railroads to investors; Waldron of Nickel Plate is new chairman

Forty to sixty billion ton-miles of freight traffic, yielding annual revenues of $1.2 to $1.8 billion, could be taken from trucks if the railroads went after it with a rate structure that reached a ceiling at three to four cents a ton-mile on intermediate and long-haul shipments.

Robert E. Thomas, manager of railroad investments, Keystone Custodian Funds, Boston, Mass., laid that prospect before railway treasury officers in an address at the annual meeting of the Treasury Division of the Association of American Railroads, which was held at the New Ocean House, Swampscott, Mass., from September 9 to 11, inclusive. The treasury officers also heard Sherwin C. Badger, financial vice-president of the New England Mutual Life Insurance Company, call upon railroad management to make an "intelligent effort" to restore railroad credit by reselling the industry to investors.

Mr. Thomas' address was what he described generally as "a plea that the railroads be aggressive and alive to their competition—a plea that the railroads get all the business to which they are entitled as the most economic form of mass carriage . . . all to the end that no potential source of profit from railroad revenue dollars will be overlooked or go by default to some other form of transportation."

"Welcome to New England"

Other speakers at the meeting included Robert S. Henry, A.A.R. vice-president in charge of the Public Relations Department, and Alfred C. Neal, first vice-president of the Federal Reserve Bank of Boston. Meanwhile, an address of "welcome to New England" had been delivered by Frederic C. Dumaine, Jr., chairman and president of the New York, New Haven & Hartford, who

was introduced by George T. Carmichael, vice-president, secretary and treasurer of that road.

Also there was an "informal address" by A. R. Seder, A.A.R. vice-president in charge of the Finance, Accounting, Taxation and Valuation Department, and the "chairman's address," delivered by Division Chairman F. H. Jeffrey, treasurer of the Chicago, Milwaukee, St. Paul & Pacific, who presided at the meeting.

Chairman-elect Waldron, treasurer of the Nickel Plate, spoke briefly to express his appreciation.

Secretary Keefer presenting memorials honoring division members who died during the past year.

Waldron Is New Chairman

At the election session, A. M. Waldron, treasurer of the New York, Chicago & St. Louis, was chosen to succeed Mr. Jeffrey in the chairmanship. Mr. Waldron had been vice-chairman, and he was succeeded in that position by A. M. Jacobs, treasurer of the Missouri-Kansas-Texas.

Adopting a recommendation of its Advisory Committee, the division modified its rules of order to establish nominating arrangements under which treasury officers of eastern and western roads will ordinarily serve alternately in the chairmanship. The modified rules define eastern and western zones from which nominees are to be chosen. And they make this statement of policy: "It is desirable that the chairman and vice-chairman be from different zones. In each case their successors should be from the opposite zone, except when a chairman is reelected."

Keefer Continues as Secretary

Richard E. Keefer, who was appointed secretary of the division last June as successor to the late Edward R. Ford, continues in that capacity. Proceedings of the meeting included adoption of a memorial resolution in recognition of Mr. Ford's service to the division. Among new honorary members elected was E. H. Bunnell, Mr. Seder's predecessor in the A.A.R. vice-presidency, who retired last February under the association's pension rules.

Nearly 400 in Attendance

The meeting was designated as the division's twelfth, but it was the forty-first annual meeting of treasury officers, including sessions held by the former Railway Treasury Officers Association. Nearly 400 members and guests of the division attended. Everett W. Smith, treasurer of the Boston & Maine, was chairman of the Committee on Arrangements.

As to the next meeting, which will be held in September, 1953, the members voted for Mackinac Island, Mich., and Quebec (city), Que., in that order of preference. The votes do not bind the Advisory Committee if it is unable to make satisfactory arrangements at either of those points.

Mr. Thomas made his call for more intensive and more enterprising efforts to attract traffic now being handled by trucks, because it seemed to him that "too little attention has been given in recent years to the most important and real source of profits in the railroad business—profits from revenue dollars." He recognized that much has been accomplished in the way of operating savings, but he said that profits from that source are "to be expected in any alert and wide-awake business."

"In the long run," Mr. Thomas added, "the most alert operating management cannot possibly make profits from operating savings unless profits are being made from revenue dollars. Revenue dollars and the profits therefrom constitute the life blood of railroads."

Turning then to prospective sources of new revenue dollars, he came to his consideration of "the loss of good profitable railroad traffic to the trucks."

Big Traffic Stake

Bringing Interstate Commerce Commission figures up to date with supplemental estimates of his own, Mr. Thomas put the annual traffic currently lost to trucks at 125 billion ton-miles. He conceded that some of this business could not be recouped by the railroads; but he went on to express his belief that "one-third to one-half of it could be recovered."

Getting one-third would mean some 40 billion ton-miles yearly, while one-half would amount to about 60 billion ton-miles. The increase in present railroad traffic would be 6 per cent or 10 per cent, respectively, Mr. Thomas also pointed out.

He went on to note that general commodities truckers realized in 1951 an average of $15.87 per ton of revenue freight transported. And he calculated that this would amount to 6.5 cents to 7 cents per ton-mile "on the basis of a probable average haul of 225 to 240 miles."

"Average ton-mile revenue is, to me, the crux of the matter," Mr. Thomas added. On the basis of the "best available information," he estimated that truck common carriers of general commodities have costs of about six cents per ton-mile, while common carriers of special commodities and private fleet operators may have costs

as low as three to four cents per ton-mile. Meanwhile, "railroads generally make money on an average charge of 1.4 cents per ton-mile."

"No Justification" for Losses

"With these relative costs," Mr. Thomas continued, "there is no justification for trucks taking intermediate and long-haul traffic away from the railroads. The answer is simple—first carefully determine the cost of moving a ton of freight a mile by truck; and second, establish that unit cost as a rate ceiling."

As noted at the outset, Mr. Thomas believes that 40 to 60 billion ton-miles could be regained with a rate ceiling of three cents to four cents per ton-mile. He used the three-cent figure in estimating that the additional annual revenue would be $1.2 billion to $1.8 billion.

Mr. Thomas was not unmindful of the prospective opposition to his plan. The truckers "would not like it a bit," he said, and he anticipated that regulatory bodies "might be shocked" by the upsetting of rate relationships that would be involved. As to the latter, he had this to say: "The traffic now moves by truck. The question is—would the regulatory agencies permit reductions in these [railroad] 'paper rates,' without at the same time ordering reductions in those rates which are moving traffic? I think the railroads ought to find out the answer to that question."

Mr. Thomas also considered the prospects for creating profits from revenue dollars in passenger and allied services. In that connection he recommended installation of a cost accounting system which would determine which runs are making money and which are losers. This would provide a basis for intelligent decisions on abandonments, Mr. Thomas noted. He went on to say that the I.C.C. formula for determining the passenger service profit or loss should be changed to set up passenger service as a "by-product of freight service."

"A new formula on that basis would materially reduce the present reported passenger service deficit and effect a real change in the attitude of most shippers toward it," Mr. Thomas added.

Make Commuter Service Profitable

As to commuter services, Mr. Thomas believes they must be maintained, so he advises that attention be given to the problem of making them profitable. He thinks that new equipment, a new fare basis, relief from local taxes, and a lowering of labor costs may be parts of the right answer.

As to "head-end" traffic, he pointed out that the railroads handle merchandise shipments in three ways, i.e., in l.c.l. service, in express service, and in forwarder service.

Noting that these three services "compete with each other," Mr. Thomas asked this question: "Why not do the job in one way only and in a way which converts revenue dollars into profits rather than losses?"

Vice-President Badger of New England Mutual Life said his call for a reselling of the industry to investors was not a suggestion that railroad managements "embark on a public campaign to whip up bullish psychology."

"What I am suggesting," he explained, "is that you explore steps that might be taken to be sure that what might be called sophisticated investors, including large institutional investors, are fully informed of what you are doing; what your problems are, and how you propose to solve them—because you do propose to solve your problems and you do not think they are insoluble."

Mr. Badger found in the record many favorable facts which "are quite at variance with popular notions." He found the railroads' ratio of wages to revenues to be about the same as that of the Bell Telephone system. He found that the incidence of bond defaults was "considerably higher" in the thirties in the industrial field than in the railroad field. And he found that the railroad industry's "pre-tax cash income" has always exceeded the industry's fixed charges, "even at the bottom of the depression."

Must Resell Industry to Investors

"These facts are not going to sell themselves to the men you want to sell," Mr. Badger continued. Thus he advised "top officers" of the railroads to carry the story to officers on the policy level of companies and institutions with funds to invest. The life insurance companies, he said, "could well own many billions more of railroad bonds without unbalancing their portfolios."

Vice-President Neal of the Federal Reserve Bank of Boston spoke on "Stabilizing the Economy at a High Level."

He recommended a balancing of government budgets by reducing expenditures rather than raising taxes. He also defended recent Federal Reserve policies which have had the effect of cutting the money supply. As to the higher interest rates resulting from such policies, Dr. Neal suggested that the railroads would be better off paying a 10 per cent higher interest rate for new money than they would be with more inflation which raised their wage and materials costs 10 per cent.

Chairman Dumaine of the New Haven extended his address of welcome to include comment on the role of treasury officers. He has been "surprised," he said, to learn that such officers generally have "so little authority."

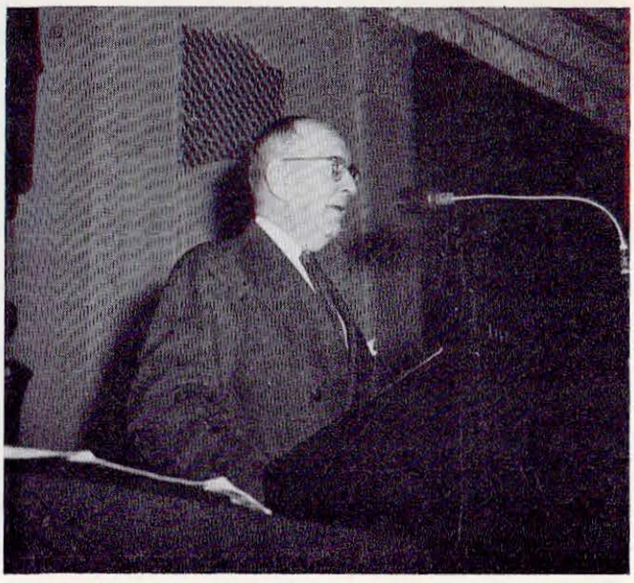
New Haven Has Made Treasurer a "No" Man

"On the New Haven," Mr. Dumaine added, "the treasurer's job is a new type of job. He can stop any payment. And he can even tell the traffic department where to get off."

Colonel Henry urged the treasury officers to seize every opportunity to tell "the railroad story." The story, Colonel Henry continued, is that the railroads are essential; they are efficient; they are progressive; and they don't operate in a vacuum, being subject to comprehensive regulation. "There is not much more of a practicing socialist in the world than the American business man when it comes to transportation," Colonel Henry also said.

A.A.R. Vice-President Seder's talk was a brief discussion of the treasury officer's role as an executive and his responsibility to employees under his jurisdiction. Chairman Jeffrey's address was an expression of his appreciation for the cooperation he received from the membership.

During intervals between the addresses, the delegates disposed of a business docket which included reports of the division's standing committees and sectional groups. The report of the Advisory Committee, which was summarized by Secretary Keefer, dealt with 19 subjects, including the matter of settlements with Canadian roads. The considerable discussion of that subject at the committee's pre-convention meeting pointed up the fact that the settlements will continue to be made in U. S. dollars, despite the discount at which they are currently quoted in Canada.



J. H. Aydelott, vice-president, Operation and Maintenance Department, Association of American Railroads, speaking at the joint opening session.

Greetings on behalf of the American Railway Engineering Association were extended by its president, C. J. Geyer, vice-president—construction and maintenance, C&O.

Track and B. & B. Men Review The Maintenance Situation

Conventions of the Roadmasters' Association and the Bridge and Building Association at Chicago last week hear Wayne Johnston, J. H. Aydelott and other speakers

Practical considerations involved in maintaining the railroads' tracks and structures were the center of attention last week at meetings in Chicago of two groups of supervisory officers. These gatherings were the annual conventions of the Roadmasters' and Maintenance of Way Association and the American Railway Bridge and Building Association, which were held at the Conrad Hilton Hotel, September 15-17. The meetings were held separately except that two joint sessions were held to consider matters of mutual interest to the two groups. One such session signaled the opening of the convention on Monday morning, September 15, while the other took place on Tuesday afternoon.

Direction of the joint sessions was shared by A. H. Whisler, president of the Roadmasters' Association (assistant engineer of the Pennsylvania, Philadelphia), and Guy E. Martin, president of the Bridge and Building Association (superintendent of water service of the Illinois Central, Chicago). Preliminary features of the opening session included greetings on behalf of the American Railway Engineering Association by its president, C. J. Geyer (vice-president—construction and maintenance of the Chesapeake & Ohio, Huntington, W. Va.); the Track Supply Association by President R. W. Torbert (Oxwell Railroad Service Company); and the Bridge and Building Supply Association by President R. R. Clegg (American Lumber & Treating Co.). Lewis Thomas (Q & C Co.), secretary of the Track Supply Association, also spoke briefly at the joint opening session.

Mr. Geyer stated that the roadmasters and bridge and building supervisors are the "backbone and advance intelligence post of our railroads for the maintenance of the fixed property." They must be relied upon to "foresee the need for maintenance—plan the work—get management approval for these plans—see that the work provided for in the program is properly carried out." Pointing out that management approval seems to be the most difficult hurdle, Mr. Geyer said the "principal cause in my case was poor salesmanship on my part."

In Mr. Geyer's opinion "supervisory officers and top management are getting a clearer understanding of the problems of each other. There has never been any difference on the objective." He believes "we are entering a great change in the art of maintenance," the basis of which is "to plan and program for the maintenance of the fixed property according to the current needs brought about by the degradation from use and time."

In his address at the opening session, J. H. Aydelott, vice-president, operations and maintenance department of the Association of American Railroads, pointed out that "in these days of pyramiding costs of everything connected with the operation and maintenance of a railroad, with competition from other forms of transportation at its highest level, and with rate increases stubbornly re-

The separate sessions of the Roadmasters' group were directed by President A. H. Whisler, assistant engineer, Pennsylvania.

President Guy E. Martin of the Bridge and Building Association, presided over its sessions. He is superintendent water service of the Illinois Central.

sisted, the question of whether a railroad can operate successfully and with a profit may depend on how much it can save rather than how much it can gross from its services." He then explained how it sometimes happens that railroads find it necessary to use available money to acquire equipment and to improve yard and station facilities with which to handle the traffic—"money which otherwise could have been available for the programs in which you men are vitally interested and which you believe would bring sizable, though in some cases long-range, economies in your own departments."

Even in the days before modern equipment and heavier rail came into wide use "it was considered," said Mr. Aydelott, "that if the combined maintenance items, Roadway and Equipment, could be held to an expenditure of 32 cents out of each dollar of earnings a railroad would be assured of a successful and profitable operation." Based on 1951 performances, a reduction from 33.6 cents to 32 cents for all maintenance expense, or 1.6 cents, would have added about $165 million to the net railway operating income of the Class I railroads.

The recent steel strike, Mr. Aydelott said, retarded all of the maintenance programs of the railroads in which steel is used, and "it is not unlikely that tonnage in new rail will fall short in 1952 by perhaps 400,000 tons of meeting the programmed requirements of the railroads." The railroads will, therefore, be faced with the necessity of carrying over into 1953 uncompleted rail and bridge programs which "you had hoped could be completed this year as a necessary step in meeting defense mobilization goals."

At the joint session on Tuesday afternoon the principal speaker was Wayne Johnston, president of the Illinois Central, whose subject was "The Men Who Run Our Railroads." He pointed out that "it won't be what I have to say here today that will make any of us better supervisors. That is something that will have to come from within ourselves. But I do hope to be able to stimulate our interest in reading and thinking and studying further in this important field."

Mr. Johnston suggested that his audience would find useful "this simple method of thinking about supervision: The good supervisor looks upstairs, he looks downstairs and he looks out over the same floor, or the same level."

"He looks upstairs," continued the speaker, "to be informed about things for which he is responsible. He needs to be informed about company policy, so that he can interpret that policy in the right spirit as well as to the letter."

Mr. Johnston said that the "good supervisor is also looking upstairs when he seeks opportunities to develop the ability of his subordinates. This is something he has to do if he is to be ready and available for a better job. Think back in your experience. If there is no one capable of taking your place you stand a small chance of being called to move up." Mr. Johnston realizes that what he was suggesting "goes against one of the basic instincts of human nature. All of us naturally like to feel that we have knowledge that makes us a little more valuable than the next fellow and which we are reluctant to impart to someone else, but unless we overcome this selfish feeling we hurt ourselves eventually."

"The good supervisor naturally keeps a good weather eye open on what is happening downstairs," said Mr. Johnston. "He keeps his people informed as to what is going on in the business in which he and they are making their living." However, "it is no simple task for a busy supervisor concerned with getting the job done to take the time to explain the why and wherefore of company policy... Obviously, this kind of supervisor is a supervisor in name only. He isn't doing the job he was hired to do."

Rules for Supervisors

Mr. Johnston enumerated a number of rules or principles for the guidance of supervisors. One of the oldest of these, he said, is to get all the facts before disciplining an employee. Another is that the "wise boss does not discipline a man in the presence of others. The hurt pride and the humiliation felt by the man being disciplined can only build up resentment and cause trouble in the future." Finally, he said, the good supervisor always seeks to "build himself up with his employees. He seeks to make them trust and respect him. He always tries to remember to be fair even to those he may dislike."

A word of caution was offered by Mr. Johnston regarding the use of rules for being a good supervisor. The trouble is, he said, that even though the supervisor knows

A STUDY IN CONCENTRATION—The Roadmasters' meeting room during the presentation of a committee report.

these rules, he has to apply them in situations which probably almost never are like the ones described in the lessons. As a consequence, he went on, it is necessary to rely on experience in many instances, but here again a difficulty is imposed because "apparently all of us don't learn the same things from experience."

"That means that all of us are faced with the need for 'unlearning' a lot of the things we are sure about. As someone aptly has said, it is not people's ignorance, but 'what they knows that ain't so,' that gets them into trouble. We don't want supervisors who know all the answers, who are positive what the 'proper' attitude of people should be and who work from a straight set of rules that they apply without thinking."

The separate sessions of the Roadmasters' Association, which were directed by Mr. Whisler, were devoted in large part to the presentation and consideration of six technical committee reports on the following subjects: Conservation and Classification of Unapplied Track Materials; Apparent Affects of 40-Hour Week on Track Maintenance: Operation and Maintenance of Mechanical Equipment in Maintenance-of-Way Work; Installation and Maintenance Practices to Extend the Life of Cross and Switch Ties; Maintenance and Inspection of Turnouts; and Records Necessary for the Efficient Maintenance and Repair of Work Equipment.

In addition, two addresses were heard during these sessions. One, entitled "Track Maintenance Without Section Gangs," was by E. L. Anderson, chief engineer of the Frisco. Mr. Anderson described the Frisco's experience with a new type of track-maintenance organization in which section gangs are replaced with fewer and larger units, known as district gangs. The other address, entitled "Patrolling Track—By Whom and How Often?" was by R. G. Simmons, general roadmaster of the Milwaukee, Chicago.

Committee reports also comprised the main feature of the separate sessions of the Bridge and Building group, which were directed by Mr. Martin. The subjects of these reports were: Present Trends in Modernization of Passenger Stations; Restoring and Prolonging Life of Masonry Structures; Inspection and Maintenance of Water Tanks; Developments in Power Tools and Machines; Safety Problems of the Supervisor; Fire Prevention Through Regular Inspections; Methods of Repairs to Steel Bridges and Structures; and Maintenance of Track Scales. This group also heard an address on How to Make Durable Concrete, by George H. Paris, railway representative, Portland Cement Association, and saw a moving picture showing realistic tests of high-pressure fog as a fire extinguishing agent in the railroad field.

Election of Officers

In the election of officers in the Roadmasters' Association, R. H. Gilkey, division engineer, Central of Georgia, Savannah, Ga., was advanced from first vice-president to president; F. G. Campbell, chief engineer, Elgin, Joliet & Eastern, Joliet, Ill., was advanced from second vice-president to first vice-president; H. W. Kellogg, division engineer, Chesapeake & Ohio, Grand Rapids, Mich., was advanced from director to second vice-president; and E. E. Crowley, division engineer, Delaware & Hudson, Albany, N. Y., was re-elected treasurer. Directors elected were C. E. Neal, general track supervisor, Southern Pacific, San Francisco; and S. E. Tracy, superintendent work equipment, Chicago, Burlington & Quincy.

New officers elected in the Bridge and Building Association were Foster R. Spofford, assistant to chief engineer, Boston & Maine, Boston, who was advanced from first vice-president to president; Lee Mayfield, resident engineer, Missouri Pacific lines, Houston, Tex., who was advanced from second vice-president to first vice-president; H. M. Harlow, assistant general supervisor bridges and buildings, Chesapeake & Ohio, who moved up from third vice-president to second vice-president; J. A. Jorlett, assistant engineer, Pennsylvania, New York, who was advanced from fourth vice-president to third vice-president; R. R. Gunderson, assistant bridge engineer, Southern, Washington, D. C., who was promoted from director to fourth vice-president; and L. C. Winkelhaus, architectural engineer, Chicago & North Western, Chicago, who was re-elected treasurer. Directors elected were G. Switzer, assistant division engineer, Western Pacific, Sacramento, Cal.; J. F. Warrenfells, master carpenter, Seaboard Air Line, Savannah, Ga. (re-elected); and M. H. Dick, engineering editor, *Railway Age*, Chicago (re-elected).

FINANCIAL

Alleghany Corporation. — *Debentures.*—Alleghany Corporation is planning to offer holders of its series A 5½ per cent preferred stock the opportunity of exchanging their shares for debentures with warrants to purchase authorized but unissued common stock at fixed prices. The plan is subject to approval by the I.C.C. and holders of the series A 5½ per cent preferred. Stockholders of record September 12 will be asked at a special meeting September 30 to authorize directors to create or incur not more than $24,000,000 of capital indebtedness in any form from time to time until October 1, 1962.

Delaware, Lackawanna & Western. — *Lehigh Valley Intervenes in Nickel Plate Directorship Case.*—The I.C.C. has authorized the Lehigh Valley to intervene in the case which involves the Lackawanna's application for permission to elect two members of the New York, Chicago & St. Louis' board of directors. The LV petition for leave to intervene asserted that road's "vital interest" in the case because LV-NKP "has been an established freight route for more than 50 years." The petition also said LV was "fearful that the present neutral position of the Nickel Plate will be destroyed." The Nickel Plate has urged the commission to deny the DL&W application (*Railway Age*, September 15, page 16).

Minneapolis, St. Paul & Sault Ste. Marie.—*New Directors.*—Gordon Murray, president of the First National Bank of Minneapolis, and Howard I. McMillan, president of Osborne McMillan Company, Minneapolis, have been elected directors to fill vacancies caused by the death of Homer B. Vanderblue and the resignation of G. W. Webster, former president of the company.

Missouri-Kansas-Texas. — *Adjustment Bond Interest Now Current.*—The board of directors has authorized payment of two coupons of the adjustment mortgage bonds. Both will become due and payable on October 1 and are Nos. 59 and 60, dated respectively, April 1, 1952, and October 1, 1952. "Payment of these coupons brings interest on the adjustment bonds to a current basis for the first time since October 1934," D. V. Fraser, Katy president, said. "The way is now clear to proceed with formulation and submission of a plan of recapitalization designed to take care of the dividend accumulation on the preferred stock and place the financial structure of the company on a sound basis."

New York, New Haven & Hartford.—*Interest in New York, Ontario & Western.*—The New Haven has advised the federal court having jurisdiction over the Ontario that it would be interested in acquiring, at a cost of $2.5 million, first mortgage bonds and 51 per cent of the common stock of a new company to be organized to take over the property of the bankrupt road. A plan of reorganization by which this could be accomplished has been submitted to the court by a committee of bondholders of the old company, and the court has undertaken to study this plan.

New Securities

Application has been filed with I.C.C. by:

CHESAPEAKE & OHIO.—To assume liability for $5,250,000 of equipment trust certificates to finance in part acquisition of 27 diesel-electric locomotive units from the Electro-Motive Division of General Motors Corporation, and 420 freight cars from the American Car & Foundry Co. The equipment, which is listed below, is expected to cost a total of about $6,639,042.

	Description and Builder	Estimated Unit Cost
2	4,500-hp. freight locomotives, each consisting of two 1,500-hp. "A" units and one 1,500-hp. "B" unit	$503,630
2	1,500-hp. road-switchers	172,922
9	1,500-hp. road-switchers	155,682
8	1,500-hp. road-switchers	166,570
2	1,200-hp. switchers	105,176
420	70-ton hopper cars	5,559

The certificates, to be dated October 15, would mature in 30 semiannual installments of $175,000 each, beginning April 15, 1953. They would be sold by competitive bidding, the interest rate to be set by such bids.

GEORGIA & FLORIDA.—For approval of a plan whereby it would sell $717,000 of equipment trust certificates to the Reconstruction Finance Corporation. The proceeds would be used to finance in part the acquisition of 150 wood-rack cars from the Bethlehem Steel Company. The certificates, bearing interest at 4 per cent, would be dated on or about May 1, 1953, and would mature in semiannual installments over a 10-year period.

PORT ANGELES WESTERN.—To borrow, from time to time, sums which would not aggregate more than $100,000, the proceeds to be used for current costs and to pay monthly installments of $2,750 due the United States government for railroad properties purchased. The borrowings would be evidenced by trustee certificates which would be sold to shippers and others "vitally interested" in rehabilitation of the road.

Division 4 of the I.C.C. has **authorized:**

ATLANTIC COAST LINE.—To nominally issue $13,817,000 of general mortgage 3½ per cent bonds, series X. A portion of the bonds ($4,954,000) will be so-called unrestricted bonds, for which the general mortgage provides. These will be exchanged for a like amount of general unified mortgage 4½ per cent bonds, series A, which have been in the ACL treasury; and the latter will be pledged as collateral security under the general mortgage. The remainder, $8,863,000, will reflect previously uncapitalized expenditures; they will be held in the ACL treasury until such time as actual sale of them or a substitute issue is applied for and authorized by the commission.

ILLINOIS CENTRAL.—To issue $62,000,000 of consolidated mortgage 30-year bonds, series E, proceeds of which will be applied to redemption of $62,107,820 of first refunding mortgage bonds, due December 1, 1963. The division's report approved a selling price of 97.347 with a 3⅞ per cent interest rate—the bid of Halsey Stuart & Co. and 129 associates, which will make the average annual cost of the proceeds about 4.03 per cent. The bonds were reoffered to the public at 97.827. This is the case in which the commission denied an IC petition for relief from competitive bidding rules (*Railway Age*, July 28, page 53; August 11, page 15; and August 25, page 18).

Commenting on sale of the issue, IC President Wayne A. Johnston said:

"With this bond sale the Illinois Central board has reached the long-hoped-for goal of simplifying the railroad's very complicated financial structure. It follows the plan laid out . . . for . . . bringing all bonded debt under a single consolidated mortgage. With refinancing of the joint refunding bonds of 1963, there now remains only $35,000,000 of debentures due in 1966 to be taken care of other than the consolidated mortgage.

"In 1939, when it was possible to begin in earnest the program of simplifying the railroad's financial structure and of reducing outstanding debt, funded debt outstanding amounted to more than $332,000,000, exclusive of equipment obligations. Following the plan adapted by the board, funded debt, excluding equipment obligations, was reduced by the end of 1951 to approximately $153,000,000. When this transaction is completed, the IC's outstanding funded debt, exclusive of equipment obligations, will have been reduced to $151,000,000. No railroad in America, except those which went through financial reorganization, has made such a phenomenal reduction in funded debt.

"In 1949 creation of a consolidated mortgage provided a means for consolidation of the railroad's bonded debt under one primary mortgage . . . In 1951 sale of $25,000,000 of consolidated bonds for the purpose of taking care of all maturities through 1955 was negotiated with a number of insurance companies. This arrangement provided for a standby for a two-year period of $12,000,000 of these bonds to meet maturities due in 1955. The directors unanimously agreed, following this successful negotiation, that we should endeavor to refinance the joint refunding bonds of 1963. . . . Now the sale of this issue brings about effective placement of all consolidated mortgage bonds in first mortgage position."

Security Price Averages

	Sept. 16	Prev. Week	Last Year
Average price of 20 representative railway stocks	61.68	62.16	55.20
Average price of 20 representative railway bonds	92.78	92.70	93.99

Dividends Declared

EUROPEAN & NORTH AMERICAN.—$2.50, semiannual, payable October 3 to holders of record September 10.

KALAMAZOO, ALLEGAN & GRAND RAPIDS.—$2.95, semiannual, payable October 1 to holders of record September 15.

MAHONING COAL.—$12.50, payable October 1 to holders of record September 22.

NORFOLK SOUTHERN.—75¢, quarterly, payable September 15 to holders of record September 5.

NORWICH & WORCESTER.—8% preferred, $2, quarterly, payable October 1 to holders of record September 15.

PIEDMONT & NORTHERN.—75¢, quarterly, payable October 20 to holders of record October 6.

PROVIDENCE & WORCESTER.—$2.50 quarterly, payable October 1 to holders of record September 15.

SOUTHERN.—M&O Stock Trust, $2, semiannual, payable October 1 to holders of record September 15.

RAILWAY OFFICERS

EXECUTIVE

John R. Wall, formerly assistant general counsel of the BALTIMORE & OHIO, has been appointed chairman of the FREIGHT TRAFFIC COMMITTEE—CENTRAL TERRITORY RAILROADS, at Chicago. Mr. Wall succeeds **Edgar V. Hill,** whose appointment as vice-chairman of the Traffic Executive Association—Eastern Railroads and chairman of the General Freight Traffic Committee—Eastern Railroads, was recently announced in *Railway Age*.

Clifford Lanier Deal, assistant general industrial agent of the CENTRAL OF GEORGIA, has been promoted to assistant to vice-president of the industrial development department at Atlanta. Mr. Deal was born at Statesboro, Ga., and began his career with the CofG as a messenger in the master car builder's office at Savannah in 1926. He

held clerical positions in the accounting department and Savannah division superintendent's office and became stenographer-clerk in the Macon traffic

Clifford Lanier Deal

agency in 1937. He later served as chief clerk at Macon, freight traffic agent at Birmingham and traveling freight agent at Macon. Mr. Deal became industrial agent at Atlanta on September 1, 1944, and was promoted to assistant general industrial agent on October 1, 1950.

Leslie T. Wright, superintendent of the DENVER & RIO GRANDE WESTERN at Grand Junction, Colo., has been elected president and general manager of the MIDLAND CONTINENTAL at Jamestown, N.D., to succeed **J. F. Sieberling,** who has been appointed chairman of the board. Mr. Wright began his railroad career in 1909 as a station helper on the Missouri Pacific. He joined the D&RGW in 1917 as a telegraph operator and train dispatcher at

Leslie T. Wright

Pueblo, Colo., and worked his way up through a number of positions until February 1937, when he was appointed trainmaster. In 1942 Mr. Wright became assistant superintendent and a year later was further promoted to superintendent.

FINANCIAL, LEGAL & ACCOUNTING

John J. Roche has been elected secretary of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Chicago, succeeding **T. W. Burtness,** who has retired. Mr. Roche started with the Mil-

John J. Roche

waukee in 1919 in its accounting and finance department. He was appointed assistant secretary in May 1951.

OPERATING

J. C. Grissom, whose appointment as superintendent of transportation of the LOUISVILLE & NASHVILLE, as noted in *Railway Age* September 15, joined the L&N in 1917 as yard clerk at Howell, Ind. He advanced through a

J. C. Grissom

number of positions to inspector of transportation, and in 1944 was appointed assistant to director of personnel at Louisville. In February 1950 Mr. Grissom was promoted to assistant superintendent of transportation and held that position until his present appointment.

J. R. Anglea, supervisor of transportation of the RAILWAY EXPRESS AGENCY, has been appointed superintendent of transportation, with headquarters as before at Atlanta, Ga. Mr. Anglea, a native of Summer City, Tenn., started his express career as a clerk in Indianapolis in 1919. After holding various positions, he became route clerk in the transportation department at Atlanta in 1944 and in 1946 he was appointed supervisor of transportation at Atlanta.

Benjamin F. Wells, assistant general manager of the CHICAGO, ROCK ISLAND & PACIFIC at Kansas City, Mo., has been transferred to Des Moines, Iowa, succeeding **George J. Mulick,** transferred to Kansas City.

TRAFFIC

L. J. Hennen, formerly traffic representative of the ST. LOUIS-SAN FRANCISCO, has been appointed general agent at Chattanooga, Tenn.

As reported in *Railway Age* August 18, **Alan B. Taylor** has been appointed general freight agent of the UNION PACIFIC at Denver. Mr. Taylor joined the UP in 1929 as office boy at Omaha and advanced to secretary and tariff clerk at that point before going to Cleveland in 1944 as traffic agent. In 1948 he was further advanced to general agent at Eugene, Ore., and held that position until his recent appointment.

As *Railway Age* reported on August 25, page 56, **Edward A. Hynes** has been appointed general freight agent of the GULF, MOBILE & OHIO at St. Louis. Mr. Hynes began his railroad career with the Lake Shore & Michigan Southern (now part of the NYC) and joined the Alton (now GM&O) in 1917 as traveling freight agent at Pittsburgh. He subsequently advanced to general agent and in 1947 was further promoted to assistant general freight agent—the position he held at the time of his recent appointment.

ENGINEERING AND SIGNALING

C. C. Herrick has been appointed division engineer of the Ohio Central division of the NEW YORK CENTRAL at Columbus, Ohio, succeeding **J. D. Fraser,** who has been transferred to the Toledo division at Toledo, Ohio. Mr. Fraser succeeds **C. R. Stattman,** who has been appointed special assistant engineer in the office of the district engineer at Cleveland, Ohio.

As reported in *Railway Age* July 28, page 56, **A. J. MacGillivray** has been appointed engineer of track for the CANADIAN NATIONAL System at Montreal. Mr. MacGillivray was born at Winnipeg, and was graduated from the University of Saskatchewan (B.Sc. in engineering). He joined the CNR as a bridgeman at Saskatoon, Sask., in 1929 and worked at various points in the Western provinces until enlisting with

the Canadian Army in 1941. Returning to railroad service in 1946, he was appointed assistant engineer at Win-

A. J. MacGillivray

nipeg in 1948 and the following year became engineer of track for the Western region.

J. E. Gibault has been appointed terminal construction engineer of the CANADIAN NATIONAL at Montreal (*Railway Age* July 28, page 56). Mr. Gibault was born at St. Jerome, Terrebonne co., Que., and attended the University of Montreal (C.E., Mining Engineer and B.A.Sc.1910). He entered railroad service in 1910 as engineer, constructing

J. E. Gibault

residences and terminals with the Transcontinental (now CNR). He subsequently served the CNR as resident engineer, division engineer, engineer of the bureau of economics, and division superintendent. Mr. Gibault was appointed assistant general manager of the Atlantic region at Moncton, N. B., in August 1940 and in December 1942 he became chief of research at Montreal.

MECHANICAL

H. R. McIlveen has been appointed general diesel supervisor — locomotive maintenance of the NEW YORK CENTRAL, succeeding **J. E. Boland,** deceased.

M. B. Dowdy, assistant to chief mechanical officer of the NORFOLK SOUTHERN, has been appointed assistant chief mechanical officer, with headquarters as before at Norfolk, Va. The position of assistant to chief mechanical officer has been abolished. Mr. Dowdy was born on January 6, 1917, at South Norfolk, Va., and began his

M. B. Dowdy

railroad career on March 17, 1936, as a carman apprentice with the NS. Upon completion of his apprenticeship on June 26, 1940, he became air brake mechanic and served in that capacity until January 1, 1944, when he was appointed chief mechanical inspector. On June 1, 1948, he was named assistant to chief mechanical officer.

PURCHASES & STORES

E. C. Mavis, formerly store foreman of the ATCHISON, TOPEKA & SANTA FE at Wellington, Kan., has been promoted to division storekeeper at La Junta, Colo., succeeding **Ralph J. Moore,** who has retired after more than 41 years' service. **Lloyd E. Johnson,** sectional storekeeper at Topeka, has been appointed store foreman to succeed Mr. Mavis.

SPECIAL

William P. Jensen and **H. V. Rhine** have been appointed assistant managers of the advertising and publicity department of the NORTHERN PACIFIC at St. Paul.

J. F. Jackson and **Earl Oliver** have been appointed assistants to manager of personnel of the ILLINOIS CENTRAL at Chicago. The position of assistant manager of personnel has been abolished.

OBITUARY

Fred Eason Waters, 59, who retired on August 15 as comptroller of the ATLANTA & WEST POINT, the WESTERN OF ALABAMA and the GEORGIA at Atlanta, Ga., died on September 10, after a long illness. Mr. Waters was born at Madison, Ga., on January 26, 1893, and entered railroad service with the Atlanta, Birmingham & Atlantic (now Atlantic Coast Line) in 1909, joining the Georgia in 1918. He was appointed comptroller of the A&WP, the WofA and the Georgia in 1940.

E. S. Smith, 84, who retired as master car builder of the FLORIDA EAST COAST on November 1, 1951, died at St. Augustine, Fla., on September 9.

"P.U.&D. Charges Will Drive L.C.L. to Trucks"

Shippers who appeared before Interstate Commerce Commission Examiner Witters in Chicago to protest proposed extension of Official territory pick-up and delivery charges (*Railway Age*, June 30, page 17), were virtually unanimous in predicting a "drastic decline" from present l.c.l. traffic levels should the commission allow the now-suspended tariffs to go into effect.

Many testified that their ratio of less-carload to less-truckload traffic had done an "about face"—from 75 and 25 per cent, respectively, to 25 and 75 per cent—in the past few years. "If these proposed charges are placed in effect," said Mr. D. Perry, general traffic manager of the Pittsburgh Screw & Bolt Co., "the remaining 25 per cent of our traffic will also go by truck." M. K. DeWitt, director of traffic of the Lampson & Sessions Co., Cleveland, said "the new charges leave us no choice and would be disastrous for the volume of rail traffic. We would be compelled to ship by carriers offering lower rates."

The question of comparative service also cropped up in the shipper's testimony. Said H. J. Bowman, traffic manager of S. C. Johnson & Son, Inc., of Racine, Wis.: "Our business requires door-to-door service in reasonable time. Railroads, in postwar years, have failed to do this. In consequence, we have been using our own trucks for pickup service and contract carriers for delivery to our customers." H. T. Reed, director of transportation of the Line

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WP TO TEST RUBBER CUSHION UNDERFRAME IN SERVICE

Delivery has been made to the Western Pacific of two Pullman-Standard PS-1 box cars equipped with the experimental rubber cushion underframe described by *Railway Age* August 25, page 42.

The cars will be assigned to transcontinental traffic, handling, wherever possible, selected lading of a highly fragile nature. Impact recording equipment will be installed in both cars to study the new underframe's performance under service conditions. It will be the first time the new underframe design has been road tested.

Unlike other cushion underframe devices, the new design locates a rubber cushion at the middle of the underframe center sill. It is coupled to the car body by means of rubber compression pads. In addition to this cushioning between the sliding center sill and the car body, conventional draft gears are used at each end of the center sill. Laboratory tests are reported to show the device capable of lessening breakage of fragile loadings by at least 60 per cent.

Material Company, Milwaukee, stated that "the trend toward motor carriers is because of improved service and lower rates. The proposed charges will accentuate that trend and would make operation of our own private trucks more attractive."

"A Nationwide Agency"

"We hear many different stories on less-carload traffic," stated R. E. Miller, traffic manager of the Ilg Ventilating Company, Chicago. "Some railroads want it, some don't. We believe all railroads should get together and find ways and means to form a nationwide agency to handle all l.c.l. traffic . . . It can be done . . . and serious consideration should be given . . ."

A view that lower contract charges for pick-up and delivery service could be obtained by railroads within his territory was set forth by T. C. Hope, general traffic director of Montgomery Ward & Co., Chicago. "In Chicago, for instance, some rail carriers pay as much as 45 cents per 100 lb. for pick-up and delivery service. Some cartage operators subcontract with other local draymen at rates from 12 to 29 cents to perform the very same service for which they are receiving up to 45 cents. In other instances, local draymen perform a similar service for motor carriers at rates as low as 12 cents. The carriers ethically should not request relief from pick-up and delivery costs until they have made a conscientious effort to obtain trucking service at much lower rates than they pay today."

Mr. Hope also said that to assess "arbitrary" charges for pick-up and de-

livery service "after receiving 12 general increases based on costs which included this service, is unreasonable and unjust, and to eliminate the service after receiving these increases is equally "inequitable."

Other shippers termed the proposal "discriminatory" because of its territorial nature and because such charges would not be borne by concerns having private sidings and trap car service.

The hearings were held on September 8, 9, 10 and 11. The proceeding is designated as I. & S. No. 6013.

Waybill Study

Another waybill study has been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. It is Statement No. 5231, State-to-State Distribution of Animals and Products, Traffic and Revenue, for the year 1951.

Amortization Certificates

Certificates of necessity for accelerated tax amortization of facilities were granted to 17 railroads during the period from August 21 through September 3, the Defense Production Administration has announced.

Roads receiving the fast write-off certificates are listed below, together with the amounts approved by D.P.A. and the percentage of those amounts which can be written off in five years.

Alabama Great Southern, $36,500—40 per cent.

Chicago, Milwaukee, St. Paul & Pacific, $256,379—40 per cent; and $383,184—50 per cent.

Chicago, Rock Island & Pacific, $520,594—40 per cent.

Elgin, Joliet & Eastern, $144,994—40 per cent; and $44,267—55 per cent.

Erie & Pittsburgh, $37,254—40 per cent.

Great Northern, $214,800—40 per cent.

Lehigh Valley, $284,540—55 per cent.

New Orleans Northeastern, $15,395—40 per cent.

New York Central, $2,254,000—40 per cent.

Northwestern Pacific, $56,845—40 per cent.

Pennsylvania, $849,216—40 per cent.

Pittsburgh, Cincinnati, Chicago & St. Louis, $49,705—40 per cent.

South Buffalo, $280,000—40 per cent; and $210,000—55 per cent.

Southern, $843,056—40 per cent.

Southern Pacific, $56,845—40 per cent.

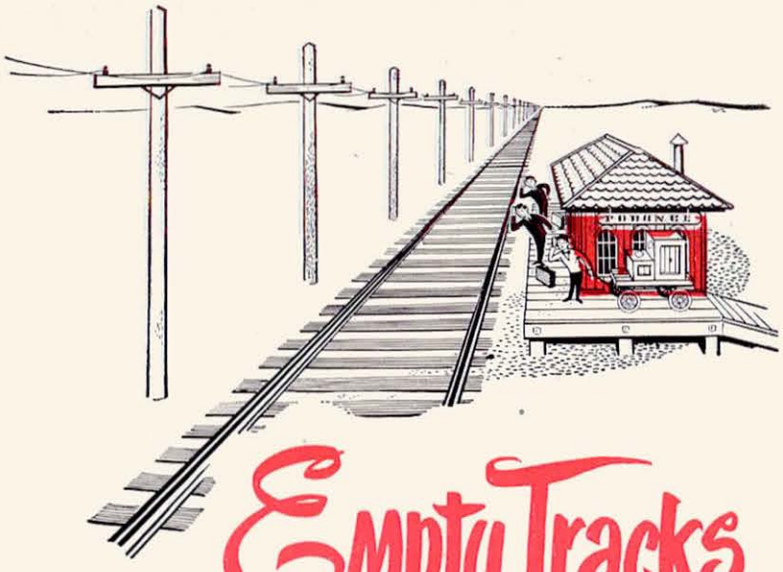
Texas & New Orleans, $697,920—40 per cent.

Union Pacific, $27,310—40 per cent; and $728,000—55 per cent.

Two Diesel Locomotives Begin Service in Korea

Two 1,600-hp. diesel-electric locomotives, manufactured by the Electro-Motive Division of General Motors Corporation, have been placed in service on the Korean National Railroad by the U.S. Army Transportation Corps.

The locomotives, capable of being operated on any track except narrow-



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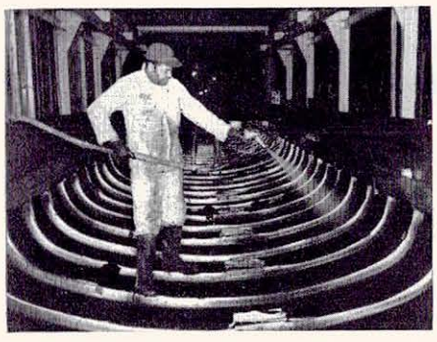
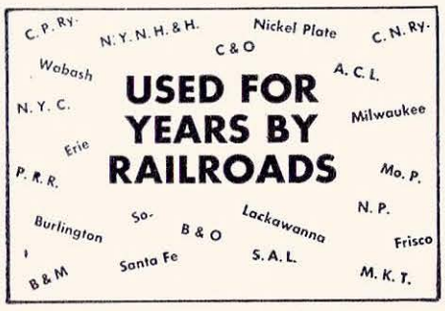


Railway Insulmat being applied to the inverted ceiling of a California Zephyr car.



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gage, arrived in Korea August 3. They are designated MRS-1, and are the first of several which the T.C. has ordered from manufacturers in this country.

Poor roadbed conditions and sharp curves will restrict train speeds with the new units, the T.C. reported. The locomotives currently are being tested to determine the type of service they can best perform under conditions in Korea.

July Accidents

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of "steam railway" accidents for July, and for the first seven months of this year. The compilation, subject to revision, follows:

Item	Month of July 1952	Month of July 1951	7 months ended with July 1952	7 months ended with July 1951
Number of train accidents*	756	815	5,619	6,277
Number of accidents resulting in casualties	34	35	313	306
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	118	134	576	623
Injured	89	111	540	564
Passengers on trains:				
(a) In train accidents*				
Killed	0	3	0	95
Injured	30	93	168	988
(b) In train-service accidents				
Killed	4	4	8	10
Injured	176	186	1,031	1,021
Travelers not on trains:				
Killed	1	0	9	2
Injured	56	47	414	418
Employees on duty:				
Killed	30	28	210	210
Injured	1,528	1,914	11,589	13,324
All other nontrespassers:**				
Killed	114	111	885	930
Injured	314	358	3,058	3,367
Total—All classes of persons:				
Killed	267	280	1,688	1,870
Injured	2,193	2,709	16,800	19,682

*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of $300 or more to railway property in 1951. Beginning January 1, 1952, this minimum was raised to $325. Only a minor part of the total accidents result in casualties to persons, as noted above

Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties **for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	96	88	797	835
Injured	180	210	2,011	2,270

Representation Elections Held on StL-SF and NYC

The Professional Engineers Committee has won a representation election among "technical engineers, architects, draftsmen and allied workers" on the St. Louis-San Francisco. The American Federation of Technical Engineers, American Federation of Labor, was defeated by a vote of 54 to 20. The latter group represented these employees prior to this election, which was conducted by the National Mediation Board.

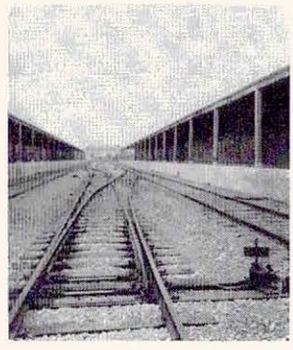
Another N.M.B. election, on the New York Central, has resulted in selection of the American Railway Supervisors Association to represent mechanical foremen in the maintenance of way department and subordinate officials in the maintenance of way and structures department. These employees heretofore were not represented by any labor organization or individual.

Missouri Approves 15 Per Cent Rate Increase

The Missouri Public Service Commission has authorized a 15 per cent general increase in intrastate freight rates. The increase approved is actually 9 per cent plus a temporary 6 per cent already in effect—in line with previous action by the Interstate Commerce Commission in Ex Parte 175 *(Railway Age,* April 21, page 71). The increase on certain bulk commodities was limited to the initial 6 per cent.

SP&S Buys 71,000 Acres For Industrial Sites

The Spokane, Portland & Seattle is reported to have purchased a tract of 71,221 acres in the Guilds Lake district near Portland, Ore. The land, which was acquired from the Housing Authority of Portland at a cost of approximately $780,000, is partially occupied by temporary wartime housing projects. As some of these living units are still in use, the SP&S has leased back to the authority some 56 acres for a period of three years. The remainder of the land will be made available for industrial sites—for which it has been deemed "ideal."



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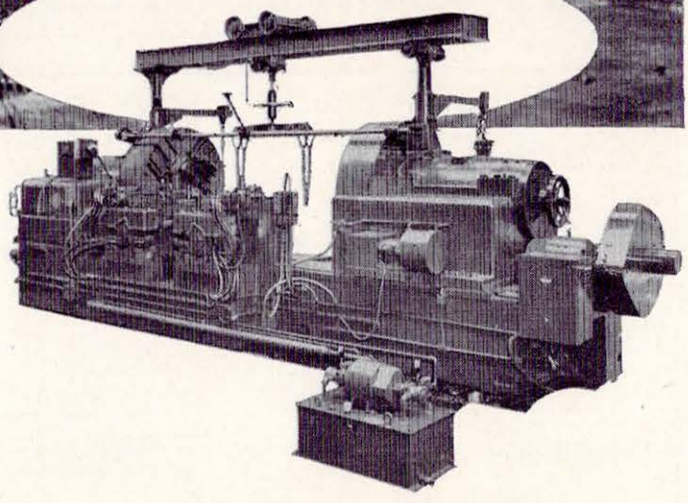

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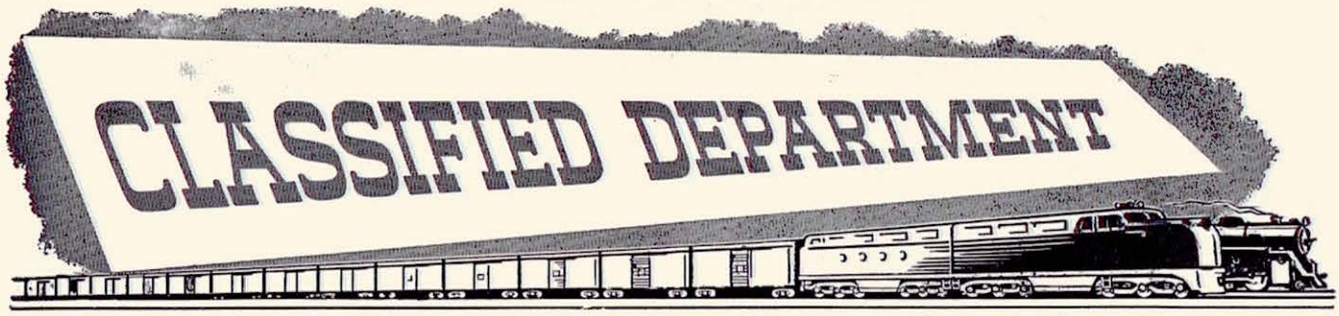

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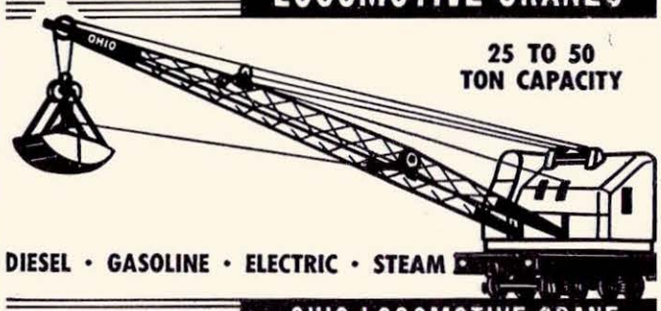

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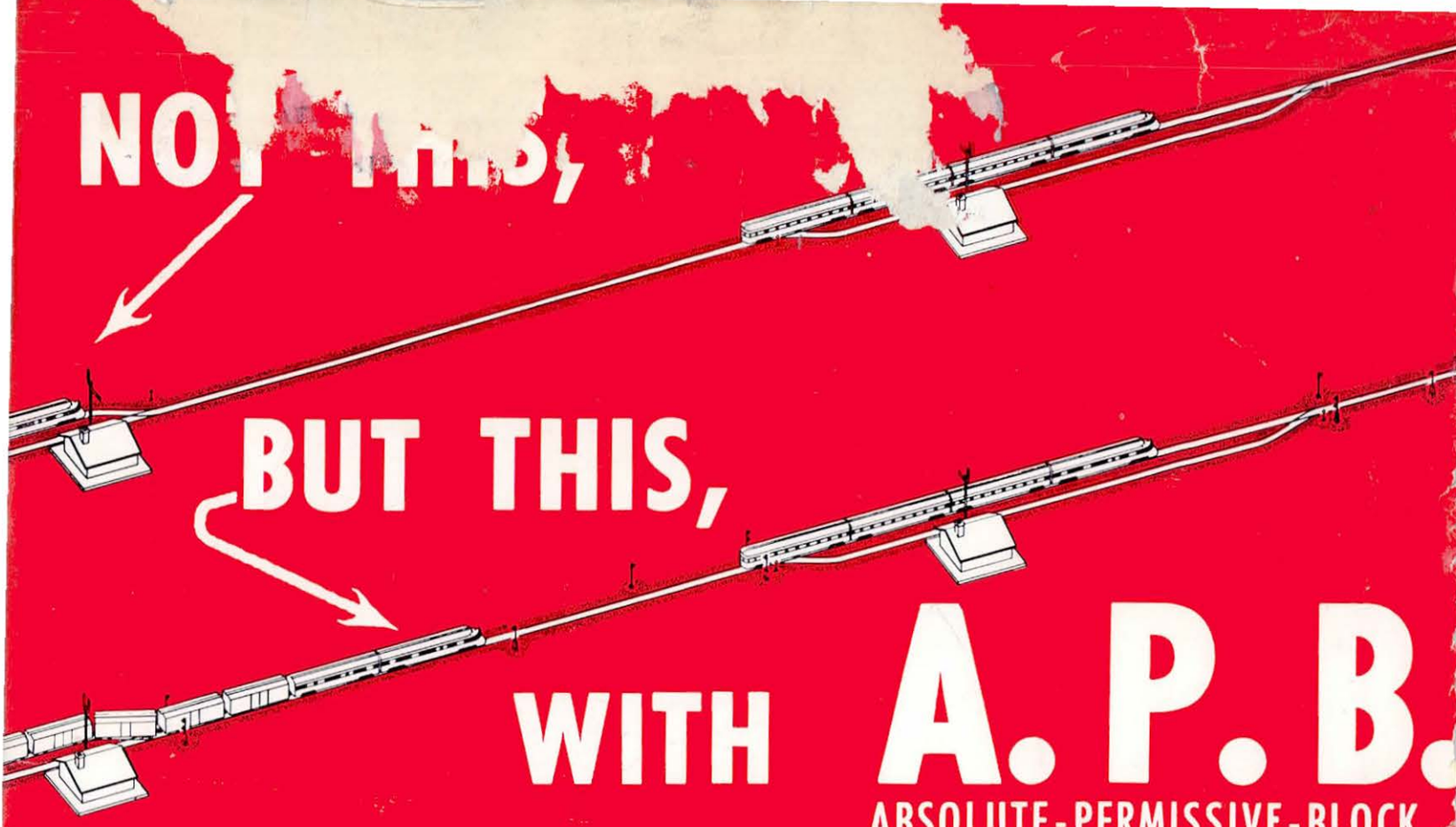

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